DOCUMENT RESUME

ED 311 221 CE 053 206

AUTHOR Eppler, Thomas
TITLE Architectural Drafting. Curriculum Development. Bulletin 1779.
INSTITUTION Northwestern State Univ., Natchitoches, La.
SPONS AGENCY Louisiana State Dept. of Education, Baton Rouge. Div. of Vocational Education.
PUB DATE 30 Jun 86
NOTE 116p.
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS *Architectural Drafting; Architecture; Building Design; *Building Plans; Competency Based Education; *Course Content; Course Organization; Design Requirements; Equipment; High Schools; Housing; *Learning Activities; Safety; State Curriculum Guides; *Structural Elements (Construction); Trade and Industrial Education; Units of Study
IDENTIFIERS Louisiana

ABSTRACT

This teaching guide is designed to aid high school vocational education teachers in teaching a course in architectural drafting for students who plan to become architects, interior designers and decorators, architectural draftspersons, landscape engineers, building contractors, building estimators, real estate persons or appraisers, and others. The course is a study of basic construction principles with emphasis placed on a completed set of working drawings for home construction. The guide outlines the course, which contains the following 15 units: rules and regulations; safety; introduction; residential design and planning; complete set of residential drawings; general room planning; architectural lettering and techniques; floor plan with door and window schedule; foundation plan with details; roof and plot plan; typical wall section; elevations; details; specifications; and computer-aided drafting. Each unit consists of objectives correlated with topics, student activities, teacher activities, and resources. Appendixes include a tool list; safety regulations; teaching aids; rules, regulations, and grading requirements; and surveying. An 18-item bibliography completes the guide. (KC)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

# ARCHITECTURAL DRAFTING

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

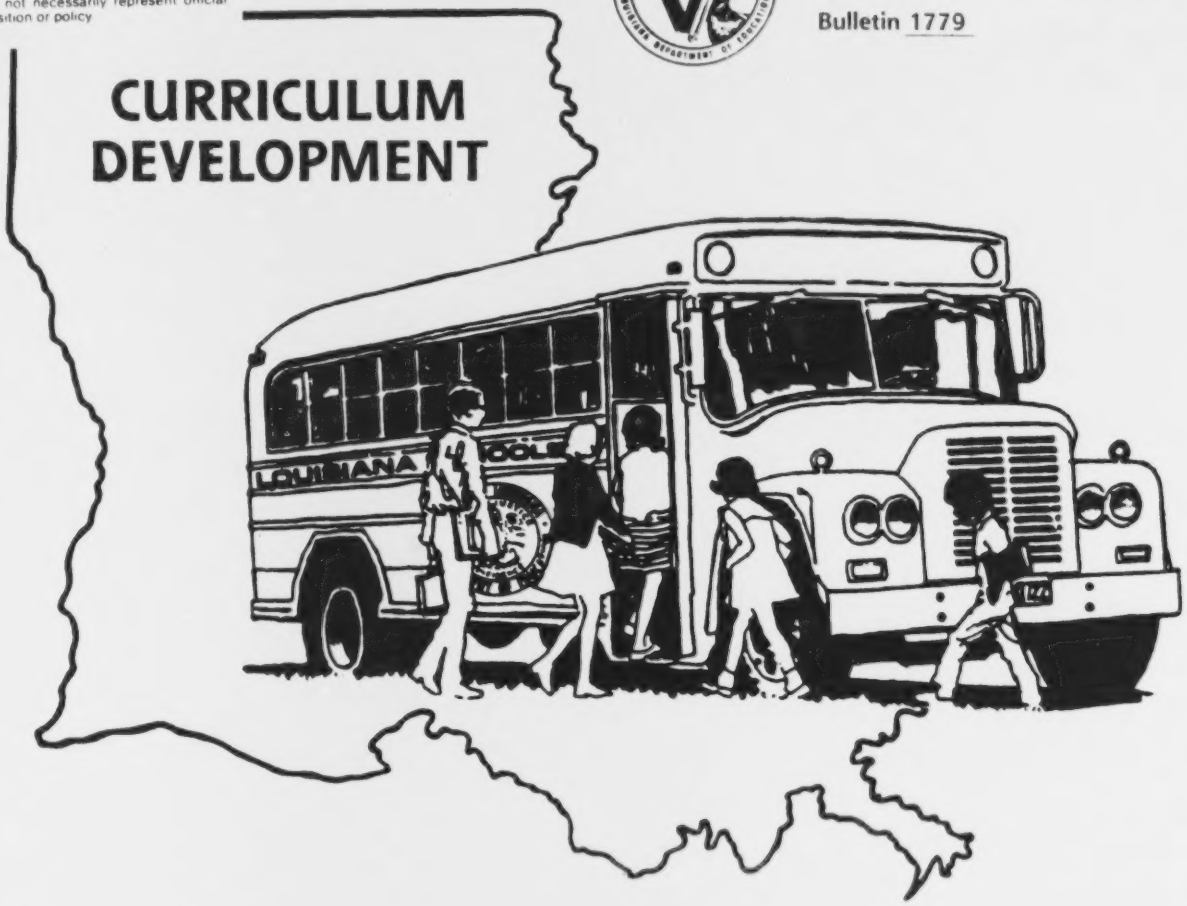
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

1986
Office of Vocational Education
Bulletin 1779

ED311221

## CURRICULUM DEVELOPMENT




CE 053206

## LOUISIANA DEPARTMENT OF EDUCATION

THOMAS G. CLAUSEN, Ph.D.
State Superintendent

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

L Urbatsch

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAI

## EQUAL OPPORTUNITY STATEMENT

IN COMPLIANCE WITH TITLE VI OF THE CIVIL RIGHTS ACT OF 1964, AND TITLE IX OF THE EDUCATION AMENDMENTS OF 1972, AND SECTION 504 OF THE REHABILITATION ACT OF 1973, THIS EDUCATIONAL AGENCY UPHOLDS THE FOLLOWING POLICY:

THIS IS AN EQUAL OPPORTUNITY INSTITUTION AND IS DEDICATED TO A POLICY OF NON-DISCRIMINATION IN EMPLOYMENT OR TRAINING. QUALIFIED STUDENTS, APPLICANTS OR EMPLOYEES WILL NOT BE EXCLUDED FROM ANY COURSE OR ACTIVITY BECAUSE OF AGE, RACE, CREED, COLOR, SEX, RELIGION, NATIONAL ORIGIN OR QUALIFIED HANDICAP. ALL STUDENTS HAVE EQUAL RIGHTS TO COUNSELING AND TRAINING.

This public document was published at a total cost of $750.00; 300 copies of this public document were published in this 1st printing at a cost of $750.00. The total cost of all printings of this document, including reprints is $750.00. This document was published by Louisiana Department of Education, Office of Vocational Education, Post Office Box 94064, Baton Rouge, Louisiana 70804-9064 for the dissemination of vocational education curriculum materials for new and changing occupational fields under authority of Public Law 98-524. This material was printed in accordance with the standards for printing by state agencies established pursuant to R.S. 43:31.

# ARCHITECTURAL DRAFTING

BULLETIN 1779

Dr. Thomas Eppler
Project Director

Funded by
The State of Louisiana
Department of Education
Office of Vocational Education

Department of Industrial Education and Technology
Natchitoches, Louisiana 71497

June 30, 1986

TABLE OF CONTENTS


| | | |
|---|---|---|
| Foreword | | i |
| Acknowledgements | | ii |
| Course Flow Chart | | 1 |
| Course Description | | 2 |
| Target Grade Levels | | 2 |
| Prerequisite | | 2 |
| General Program Goals and Objectives | | 2 |
| Course Objectives | | 2 |
| Time Frame | | 3 |
| Course Outline | | 4 |
| Unit Teaching Guide | | |
| Unit I | Rules and Regulations | 14 |
| Unit II | Safety in the Drafting Room | 15 |
| Unit III | Introduction | 16 |
| Unit IV | Residential Design and Planning | 18 |
| Unit V | Complete Set of Residential Drawings | 19 |
| Unit VI | General Room Planning | 20 |
| Unit VII | Architectural Lettering and Techniques | 21 |
| Unit VIII | Floor Plan Layout with Door and Window Schedules | 22 |
| Unit IX | Standard Concrete Slab Foundation Plan with Details | 25 |
| Unit X | Roof and Plot Plan | 27 |
| Unit XI | Typical Wall Section | 29 |
| Unit XII | Elevations | 31 |
| Unit XIII | Details | 32 |
| Unit XIV | Specifications | 33 |
| Unit XV | Computer-Aided Drafting (CAD) | 34 |
| Appendix 1 | Tool List | 35 |
| Appendix 2 | Safety | 40 |
| Appendix 3 | Teaching Aids | 43 |
| Appendix 4 | Rules, Regulations, and Grading | 58 |
| Appendix 5 | Surveying: Roof and Plot Plan | 63 |
| Bibliography | | 85 |

## FOREWORD

This publication is a guide for the improvement of instruction in Industrial Arts Education in Louisiana. It should be of benefit to industrial arts teachers, supervisors, counselors, and administrators. These operational guidelines will help local administrators, teacher educators, and industrial arts teachers determine the extent to which their programs are meeting the needs of our youth. Industrial Arts Education Programs must be organized to meet the needs of all students.

A constant concern for educators is the construction and revision of curriculum. Industry and technology are the core of industrial arts instruction. Both are constantly changing; therefore, curriculum and instruction must change in order to provide students a realistic and accurate understanding of industry and its function in our complex technological society.

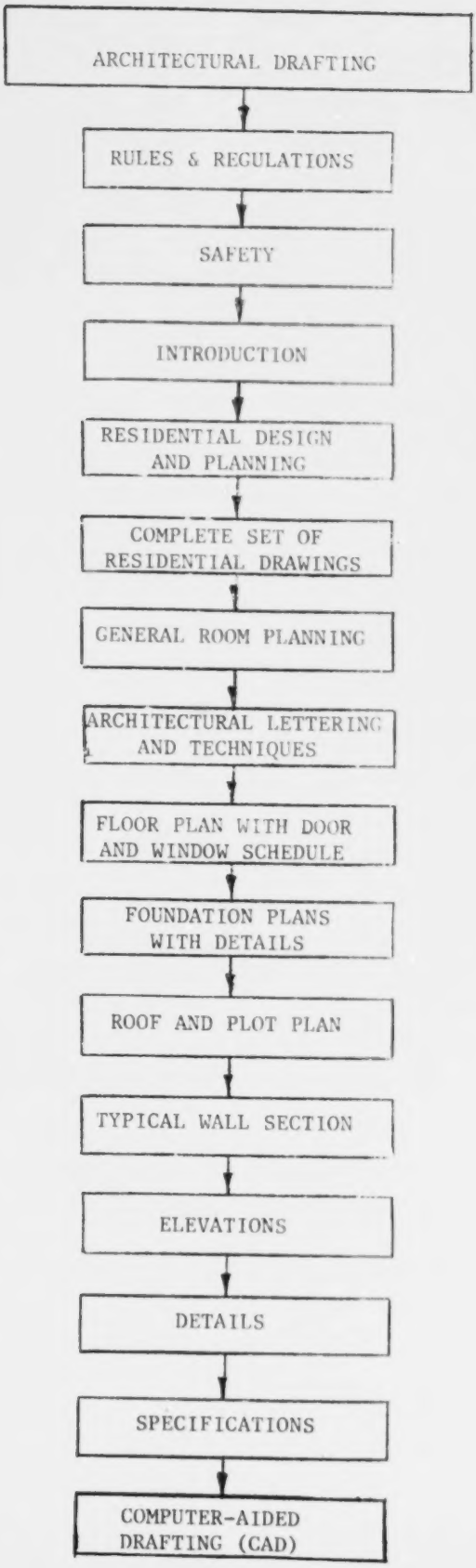
Thomas G. Clausen

THOMAS G. CLAUSEN, Ph.D.
STATE SUPERINTENDENT OF EDUCATION

ACKNOWLEDGEMENTS

This publication represents the cooperative efforts of personnel in the Louisiana Industrial Arts Association and the Industrial Arts Section in the Office of Vocational Education, Louisiana State Department of Education. Special recognition goes to Dr. Thomas L. Eppler, Northwestern State University, project director. Special commendation goes also to Charles W. Powell and Vincent Tuminello who served on the writing team and worked diligently to produce this guide.

Elaine Webb, Ed.D.
Assistant Superintendent
Office of Vocational Education


ARCHITECTURAL DRAFTING
RULES & REGULATIONS
SAFETY
INTRODUCTION
RESIDENTIAL DESIGN AND PLANNING
COMPLETE SET OF RESIDENTIAL DRAWINGS
GENERAL ROOM PLANNING
ARCHITECTURAL LETTERING AND TECHNIQUES
FLOOR PLAN WITH DOOR AND WINDOW SCHEDULE
FOUNDATION PLANS WITH DETAILS
ROOF AND PLOT PLAN
TYPICAL WALL SECTION
ELEVATIONS
DETAILS
SPECIFICATIONS
COMPUTER-AIDED DRAFTING (CAD)

Title:

Architectural Drafting

Course Description:

Architectural Drafting is designed to give the student an overview of the basic concepts that are common in the area of Residential Planning and Design. The steps in planning will enable students to design a residence to meet given specifications. The students will gain firsthand, practical experiences, in addition to theoretical knowledge.

Target Grade Levels:

Grades 10 - 12

Prerequisite:

Basic Drafting

General Program Goals and Objectives:

This course is designed to attract students who plan to become architects, interior designers and decorators, architectural draftspersons, landscape engineers, building contractors, building inspectors, building estimators, real estate salespersons or appraisers, and others.

This course is a study in basic construction principles with emphasis placed on a completed set of working drawings for home construction. Students will be given the opportunity to do research on city, subdivision, commercial, and residential planning.

Course Objectives:

To research and apply F.H.A. and City Building Codes and Standards to residential plans

To develop a unique lettering style and technique

To demonstrate the basic elements of architectural dimensioning

To communicate verbally in the field of architecture

To demonstrate a basic knowledge of architectural history

To identify different architectural styles

To evaluate a proposed construction project with special reference to materials and workmanship in monetary value

To develop a complete set of residential drawings

ARCHITECTURAL DRAFTING

TIME FRAME

| | | |
|---|---|---|
| Unit I | Rules and Regulations | 2 Hours |
| Unit II | Safety | 2 Hours |
| Unit III | Introduction | 10 Hours |
| Unit IV | Residential Design and Planning | 15 Hours |
| Unit V | Complete Set of Residential Drawings | 10 Hours |
| Unit VI | General Room Planning | 15 Hours |
| Unit VII | Architectural Lettering & Techniques | 5 Hours |
| Unit VIII | Floor Plan with Door & Window Schedule | 25 Hours |
| Unit IX | Foundation Plan with Details | 15 Hours |
| Unit X | Roof and Plot Plan | 15 Hours |
| Unit XI | Typical Wall Section | 15 Hours |
| Unit XII | Elevations | 15 Hours |
| Unit XIII | Details | 15 Hours |
| Unit XIV | Specifications | 10 Hours |
| Unit XV | Computer-Aided Drafting | 10 Hours |
| | Total | 179 Hours |

Times given are approximate. Drawing time will vary according to the complexity of the individual residential design. Please bear in mind that class time is necessary for testing, the issuing and collection of textbooks, and various other functions that cause a variance in the schedule.

ARCHITECTURAL DRAFTING

A COURSE OUTLINE

I. STATE, PARISH, LOCAL SCHOOL, CLASSROOM LEGAL RULES AND REGULATIONS

II. SAFETY IN THE DRAFTING ROOM

A. Student Responsibility

B. Safe Use of Equipment

C. Safe Use of Individual Drafting Equipment

D. Room Arrangement Safety

E. Housekeeping Safety

F. Personal Safety

III. INTRODUCTION

A. History of Architectural Drafting

1. Beginning of architecture
   a. Egyptians
   b. Greeks
2. Architectural structures
   a. Bearing wall
   b. Post and lintel
   c. The arch
   d. The vault
   e. The dome

B. 20th Century Architecture

1. Technological advances
2. New construction methods

C. Architecture of the Future

1. Construction methods
2. Materials

D. Career Opportunities in Architecture

1. Residential construction
2. Light commercial construction
3. Heavy commercial construction

E. Career Preparation for Architecture

1. Courses--high school
2. Courses--college
3. License exam

IV. RESIDENTIAL DESIGN AND PLANNING

A. Building Styles and Designs

1. Single level
2. One and one-half level
3. Two level
   a. Split level
   b. Two story

B. Site Considerations

1. Neighborhood
2. Acreage/subdivision
3. Inside city limits/outside city limits
4. Terrain
5. Restrictions

V. COMPLETE SET OF RESIDENTIAL DRAWINGS

A. Floor Plan with Door and Window Schedules and Electric

B. Foundation Plan with Details and Plumbing

C. Roof and Plot Plan

D. Typical Wall Section

E. Exterior Elevations

F. Framing Details

G. Cabinet Details

H. Fireplace Details

I. Water and Sewage Details (Rural)

J. Description of Materials

VI. GENERAL ROOM PLANNING

A. Accessibility, Orientation, and Traffic Patterns

1. Entries
2. Halls

B. Basic Areas of the Residence

1. Living
2. Sleeping
3. Service

C. Economy of Floor Space

1. Room sizes
2. Heated areas
3. Nonheated areas

D. Plan Conventions and Terminology

1. FHA/VA Codes
2. Electrical symbols
3. Plumbing symbols
4. Architectural terminology

VII. ARCHITECTURAL LETTERING AND TECHNIQUES

A. Lettering

1. Lettering style and technique
2. Spacing proportion and balance
3. Lettering devices

B. Dimensioning

1. Numbers--whole and fractions
2. Extension and dimension lines
3. Methods
   a. Outside to inside
   b. Outside to outside
   c. Center to center
4. Dimensioning floor plan
   a. Intermediate
   b. Overall
5. Notes
   a. Local
   b. General

VIII. FLOOR PLAN LAYOUT WITH DOOR AND WINDOW SCHEDULES

A. Basic Considerations

1. Border lines
   a. Spacing
   b. Sizes
2. Title block
   a. Size
   b. Information
3. Door schedule development and layout
   a. Sizes/quantities
   b. Information/description
4. Window schedule development and layout
   a. Sizes
   b. Information and description
5. Scale or floor plan

6. Placement of floor plan
   a. Dimensions and notes
   b. Spacing

B. Layout of Floor Plan

1. Wall sizes
   a. Exterior
      (1) Brick veneer
      (2) Frame
   b. Interior
      (1) Partition (size varieties)
      (2) Plumbing
      (3) Sound
2. Establish location of walls
   a. Exterior
   b. Interior
   c. Provisions for special feature items
      (1) Hot water tank location
      (2) Return air chamber location
      (3) Heating and cooling closet
3. Establish location of openings in walls
   a. Doors
   b. Windows
4. Locate special features
   a. Kitchen cabinets (kitchen layouts)
   b. Bath (bathroom layouts)
   c. Storage
   d. Utility
   e. Stairs
   f. Fireplace
   g. Specialty items
5. Locate symbols on floor plan
   a. Door
   b. Window
   c. Electrical
   d. Plumbing
   e. Heating and cooling
   f. Applicances
   g. Ceiling and floor joists
   h. Concealed and exposed beam symbols
   i. Specialty items

C. Dimensioning Floor Plan

1. Methods
   a. Outside to inside
   b. Inside to inside
   c. Center to center
2. Door and window identification
   a. Doors--numerals
   b. Windows--letters
3. Exterior dimensions
   a. Intermediate (windows, walls, and doors)
   b. Overall

4. Interior dimensions
   a. Location
   b. General

D. Highlighting the Floor Plan

1. Masonry symbols
2. Wall shading
3. Burnishing
4. Plan title
5. Scale identification

IX. STANDARD CONCRETE SLAB FOUNDATION PLAN WITH DETAILS

A. Slab Plan Layout

1. Trace perimeter, elevation changes, and all plumbing details from floor plan
2. Establish size and location of concrete beams
3. Locate beam detail symbols
4. Dimension
   a. Intermediate
      (1) Edge of slab to center of beams
      (2) Edge of slab to elevation changes
      (3) Locate special features
   b. Overall
   c. Notes
      (1) Local
      (2) General

B. Beam Details

1. Exterior bearing
2. Interior bearing
3. Garage to house
4. Exterior garage
5. House to porch
6. Porch end
7. Fireplace
8. Special features

C. Highlighting the Slab Plan

1. Symbols
2. Shading
3. Plan title
4. Scale identification

X. ROOF AND PLOT PLAN

A. Select Scale

B. Select Property

1. Size
2. Natural grade elevations

C. Layout Property Lines

1. Bearing
2. Length

D. Locate Meridian Arrow (North Direction)

E. Locate Structure on Property Site

1. Setback requirements
2. Draw exterior walls as hidden lines
3. Select type of roof construction
4. Draw roof lines solid

F. Dimension the Structure

1. Overall width and depth
2. Distance from house to two adjacent property lines

G. Locate all Driveways, Sidewalks, and Patios

1. Surface
2. Sizes

H. Locate Utility Easements

1. Gas
2. Electricity
3. Water
4. Sewage

I. Locate Streets

1. Center lines
2. Width

J. Labeling

1. House slab finish grade
2. Garage finish grade
3. Sidewalks, driveways, and patios
4. Utility easements
5. Lot number
6. Unit number
7. Street name and address
8. Subdivision name
9. Special features
10. Plan title
11. Scale identification

XI. TYPICAL WALL SECTION

A. Exterior Wall Footing

1. Footing with masonry shelf
2. Footing for frame structure

B. Interior Wall Footing

C. Exterior Wall Construction

1. Masonry
2. Frame

D. Interior Wall Construction

E. Section Through Door/Window Openings

1. Headers
2. Sills

F. Joist

1. Floor
2. Ceiling

G. Rafters

1. Cut roof
2. Truss

H. Bracing

1. Bridging
2. Wind
3. Strong back

I. Roof

1. Sheathing
2. Felt
3. Shingles

J. Cornice

1. Overhang size
2. Facia
3. Frieze
4. Soffit
5. Lookout
6. Nailers
7. Trim

K. Insulation

1. Attic
2. Walls

L. Interior Wall Material

1. Gypsum board
2. Wood

M. Ceiling Material

1. Gypsum board
2. Wood
3. Acoustic

N. Interior Trim

1. Base
2. Shoe
3. Ceiling mold

O. Labeling and Dimensioning/Symbols

1. Slab
2. Walls
3. Roof

XII. ELEVATIONS (SINGLE STORY)

A. Front View

B. Rear View

C. Left Side View

D. Right Side View

E. Technical Data Required

1. Ground line
2. Finish floor line
3. Frieze board
4. Facia board
5. Windows
6. Doors
7. Roof pitch
8. Roof overhang
9. Chimney location
10. Special features
11. Dimensions
12. Notes
13. Scale
14. View identification

F. Rendering

1. Symbols
   a. Brick or stone symbol
   b. Siding
   c. Roofing
   d. Landscaping
2. Highlighting
   a. Tools
   b. Techniques

XIII. DETAILS

A. Cabinets

1. Kitchen
2. Bath
3. Special
4. Storage

B. Fireplace

1. Pre-fab
2. Masonry
   a. Section
   b. Frontal view

C. Doors

1. Jamb
2. Threshold

D. Windows

1. Jamb
2. Sill

E. Special Bracing

1. Strong back
2. Wind bracing
3. Collar bracing
4. Bridging

F. Waste System

1. Septic
2. Treatment plant

G. Water Well

H. Special Features

XIV. SPECIFICATIONS

A. General Information

1. Type of construction
2. Location
3. Sponsor

B. Materials

1. Sizes
2. Type
3. Quality

C. Equipment

1. Sizes
2. Make and model
3. Quantity

D. Construction Operations

1. Fabrication
2. Installation

E. Specified Workmanship

F. Minimum Requirements

XV. COMPUTER-AIDED DRAFTING (CAD)

A. Definition of Terms

1. Computer
2. Design drafter
3. Documents
4. Automated design
5. Programmer
6. Program
7. Computer language
8. On-line operation
9. Off-line operation

B. Function of Computer-Aided Design in Drafting

C. How the Computer Functions in Computer Graphics

D. Digitizer

1. Manual digitizer
2. Mechanized or automated digitizer

E. Artwork

F. Automated Drafting Machines

G. Plotters

H. Computer Graphics and the Future of Drafting

UNIT I. RULES AND REGULATIONS 2 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to:<br><br>identify the state, parish, school, and room rules and regulations that apply to the drafting room. | I. STATE, PARISH, LOCAL SCHOOL, CLASSROOM LEGAL RULES AND REGULATIONS<br>A. State Rules<br>B. Parish Rules<br>C. School Rules<br>D. Room Rules | Read and sign rules and regulations handout sheet. | Discuss the rules and regulations in the various handbooks that apply to the drafting room.<br><br>Make handout sheets of rules and regulations for students to read and sign.<br><br>Duplicate copies could be made so both student and teacher will have a copy. | State Handbook<br>Parish Handbook<br>School Handbook<br>Appendix (sample) |

UNIT II. SAFETY IN THE DRAFTING ROOM - 2 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to:<br><br>identify the safety rules and regulations that apply to the drafting room. | II. SAFETY IN THE DRAFTING ROOM<br>A. Student Responsibilities<br>B. Safe Use of Equipment<br>C. Safe Use of Individual Drafting Equipment<br>D. Room Arrangement Safety<br>E. Housekeeping Safety<br>F. Personal Safety | Read and sign safety handout sheet.<br><br>Safety test | Demonstrate the correct way to use the classroom equipment.<br><br>Demonstrate the safe use of student equipment.<br><br>Make posters and bulletin boards depicting various safety topics. | State Industrial Arts Safety Book<br><br>Appendix no. 2 |

UNIT III. INTRODUCTION 10 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | III. INTRODUCTION | Read chapter. Answer study questions. | | Book 5, pp. 195-228<br>Book 6, pp. 1-8 |
| outline a brief history of architecture. | A. History of Architectural Drafting<br>1. Beginning of architecture<br>a. Egyptians<br>b. Careers<br>2. Architectural structures<br>a. Bearing wall<br>b. Post and lintel<br>c. The arch<br>d. The vault<br>e. The dome | | Gather and distribute examples of early architecture. | Book 7, pp. 7-19 |
| identify major architectural styles. | | Collect pictorial examples of various architectural styles. | Construct bulletin board depicting architectural advances. | |
| | B. 20th Century Architecture<br>1. Technological advances<br>2. New construction methods | | | |
| identify present and future architectural trends. | C. Architecture of the Future<br>1. Construction methods<br>2. Materials | Choose one aspect of architectural history and prepare a short paper or class presentation. | | |
| identify the various careers available in architectural occupations. | D. Career Opportunities in Architecture<br>1. Residential construction<br>2. Light commercial construction<br>3. Heavy commercial construction | | | Book 4, pp. 445-449<br>Book 5, pp. 1-10<br>Book 16, pp. 244-247 |

UNIT III. INTRODUCTION (Continued)

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| | E. Career Preparation for Architecture<br>1. Courses required (high school)<br>2. Courses required (college)<br>3. License examination | Collect newspaper want-ads related to architecture.<br>Visit guidance counselor<br>Visit local architectural firms and job sites.<br>Unit test | Construct flow chart depicting courses of study and their outcome.<br>Display bulletin board showing career opportunities.<br>Have local architect as speaker. | |

UNIT IV. RESIDENTIAL DESIGN AND PLANNING 15 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | IV. RESIDENTIAL DESIGN AND PLANNING | Read chapter. Answer study questions. | | Book 4, pp. 100-128<br>Book 5, pp. 248-264<br>Book 6, pp. 10-43<br>Book 7, p. 35<br>Book 10, pp. 248-262 |
| identify present day residential styles and designs of homes. | A. Building Styles and Designs<br>1. Single level<br>2. One and one-half level<br>3. Two level<br>a. Split level<br>b. Two story | Sketch pictures representing the present architectural styles and designs found in the community. | Prepare bulletin board to illustrate the advantages of proper site constructions when planning a residence. | |
| make knowledgeable choices for placement of a residential structure. | B. Site Considerations<br>1. Neighborhood<br>2. Acreage/subdivision<br>3. City/rural<br>4. Terrain<br>5. Restrictions | Make a list of features relating one's residence to an ideal plan. | Dissseminate information regarding local zoning ordinances. | |
| | | Display a correlation between one's community and an ideal situation. | Display and discuss various subdivision layouts in the local area and relate them to site planning factors. | |

UNIT V. COMPLETE SET OF RESIDENTIAL DRAWINGS 10 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | V. COMPLETE SET OF RESIDENTIAL DRAWINGS | Read chapter. | | Books 2 and 3 |
| identify the various drawings that make up a complete set of house plans. | A. Floor Plan with Electric Door and Window Schedules | Answer study questions. | Collect sets of residential plans and display them for students. | Book 10, p. 7<br>Book 12, p. 213 |
| | B. Foundation Plan with Details and Plumbing | Examine various sets of residential plans and discuss the differences in the way they are drawn and presented. | Make and show transparencies depicting the various plans pointing out the main features of each. | |
| | C. Roof and Plot Plan | | | |
| demonstrate the relationships of the various plans to the completed set. | D. Typical Wall Section | Review a "Description of Materials" sheet and discuss the information required. | | Book 14, p. 73 |
| | E. Exterior Elevations | | | |
| identify the distinguishing characteristics of each individual plan. | F. Framing Details | | | |
| | G. Cabinet Details | | | |
| | H. Fireplace details | | | |
| | I. Water and Sewage Details (Rural) | | | |
| | J. Description of Materials | | | |
| | | Unit test | | |

UNIT VI. GENERAL ROOM PLANNING 15 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | VI. GENERAL ROOM PLANNING | Read chapter, answer study questions. Sketch a floor plan of a residence to instructor's specifications showing correct traffic patterns and room layout, following FHA-VA codes. | | |
| identify various areas of a residence. | A. Accessibility, orientation, and traffic patterns<br>1. Entries<br>2. Halls | | | |
| calculate the square footage of a structure. | B. Basic Areas of Residence<br>1. Living<br>2. Sleeping<br>3. Service | Upon completion of a residential sketch, apply the required electrical, plumbing, and architectural symbols. | Using overhead projector with transparencies, demonstrate the correct method for electrical, plumbing, and architectural symbol layout. | Book 2, p. 34<br>Book 6, pp. 13-102<br>Book 7, pp. 67-153 |
| | C. Economy of Floor Space<br>1. Room sizes<br>2. Heated areas<br>3. Nonheated areas | | | |
| select the proper electrical and plumbing symbols and apply FHA-VA codes to a residential plan. | D. Plan Conventions and Terminology<br>1. FHA-VA codes<br>2. Electrical symbols<br>3. Plumbing symbols<br>4. Architectural terminology | | Prepare vocabulary quiz on architectural terms. | Workbook 15, p. 117<br>Book 2, p. 10B-E |
| | | Unit test | | |

UNIT VII. ARCHITECTURAL LETTERING AND TECHNIQUES 5 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | VII. ARCHITECTURAL LETTERING AND TECHNIQUES | Read chapter. Answer study questions. Complete a lettering exercise developing individual style. | Demonstrate proper use of guideline spacing, proportion, and balance. | |
| demonstrate proper lettering techniques using individual styles. | A. Lettering<br>1. Style and technique<br>2. Spacing, proportion, and balance<br>3. Lettering devices | | Demonstrate various lettering devices.<br>Demonstrate various lettering styles. | Book 2, pp. 1-4<br>Book 4, p. 23<br>Book 5, p. 11<br>Book 6, p. 176<br>Book 7, p. 59<br>Book 16, p. 335 |
| properly dimension a floor plan.<br>interpret the dimensions and notes of a residential floor plan. | B. Dimensioning<br>1. Numbers--whole/fractions<br>2. Extension and dimension lines<br>3. Method<br>a. Outside to inside<br>b. Outside to inside<br>c. Center to center<br>4. Dimensions for floor plan<br>a. Intermediate dimensions<br>b. Overall dimensions<br>5. Notes<br>a. Local<br>b. General | | Display professional lettering styles.<br>Prepare and present several scaled floor plans depicting various dimensioning problems. | Book 4, p. 17<br>Book 7, p. 57<br>Book 16, p. 420 |
| | | Unit test | | |

VIII. FLOOR PLAN LAYOUT WITH DOOR AND WINDOW SCHEDULES 25 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | VIII. FLOOR PLAN LAYOUT WITH DOOR AND WINDOW SCHEDULES | Read chapter. Answer study questions. Draw and submit a detailed floor plan. | Make a detailed checklist for student use in developing a floor plan. | Book 7, p. 275<br>Book 8, p. 93<br>Book 16, pp. 457-460 |
| | A. Basic Considerations<br>1. Border lines<br>a. Spacing<br>b. Sizes<br>2. Title Block<br>a. Size<br>b. Information | | Show film strip Drawing the Floor Plan. | |
| layout border line, title blocks, window and door schedules. | 3. Door Schedule Development and Layout<br>a. Sizes/quantities<br>b. Information/ description | | Display sample title block with necessary information. | Book 3, pp. 4-5A<br>Book 4, p. 266<br>Book 6, p. 184 |
| | 4. Window Schedule Development and Layout<br>a. Sizes<br>b. Information and description | | Display sample of door and window schedules. | Book 8, p. 103 |
| | 5. Scale of floor plan<br>6. Placement of floor plan<br>a. Dimension notes<br>b. Spacing | | Assist student in the floor plan layout. | |
| properly position and layout floor plan. | B. Layout of Floor Plan<br>1. Wall sizes<br>a. Exterior<br>(1) Brick veneer<br>(2) Frame<br>b. Interior<br>(1) Partition (size) varieties<br>(2) Plumbing<br>(3) Sound | | Discuss features of the varieties of doors and windows. | Book 6, p. 79<br>Book 16, p. 466 |

UNIT VIII. FLOOR PLAN LAYOUT WITH DOOR AND WINDOW SCHEDULES (Continued)

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| locate all exterior and interior walls using proper sizes. | 2. Establish location of walls<br>a. Exterior<br>b. Interior<br>c. Provisions for special features, terms<br>(1) Hot water tank<br>(2) Return air chamber location<br>(3) Heating and cooling closet | | | Book 4, p. 292 |
| | 3. Establish location of openings in walls<br>a. Doors<br>b. Windows | | | |
| | 4. Locate special features<br>a. Kitchen cabinets (kitchen layouts)<br>b. Bath (bathroom layouts)<br>c. Storage<br>d. Utility<br>e. Stairs<br>f. Fireplace<br>g. Specialty items | | Discuss basic kitchen and bath layouts. | Book 2, pp. 4 & 4A<br>Book 4, p. 250 |
| locate and apply proper symbols to floor plan. | 5. Locate symbols in floor plan<br>a. Door<br>b. Window<br>c. Electrical | | Discuss electrical requirements and the use of electrical symbols. | Book 2, pp. 5-7A<br>Book 4, p. 240<br>Book 8, p. 317 |
| | d. Plumbing<br>e. Heating/cooling<br>f. Appliances | | Discuss plumbing requirements and the use of plumbing symbols. | Book 10, pp. 121-138<br>Book 2, pp. 3 & 3A |

UNIT VIII. FLOOR PLAN LAYOUT WITH DOOR AND WINDOW SCHEDULES (Continued)

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| | g. Ceiling and floor joists<br>h. Concealed/exposed beams<br>i. Specialty items | | Discuss the labeling and notes applied to a standard floor plan. | |
| choose a method of dimensioning and properly apply in a floor plan. | C. Dimensioning Floor Plan<br>1. Methods<br>a. Outside to inside<br>b. Inside to inside<br>c. Center to center<br>2. Door and window identification<br>a. Doors--numerals<br>b. Windows--letters<br>3. Exterior dimensions<br>a. Intermediate (windows, walls, and doors)<br>b. Overall<br>4. Interior dimensions<br>a. Location<br>b. General | | Demonstrate various methods of dimensioning a floor plan. | Book 4, p. 210<br>Book 6, p. 213<br><br>Book 6, p. 522 |
| produce a completed floor plan with all necessary details and highlighting. | D. Highlighting the Floor Plan<br>1. Masonry symbols<br>2. Wall shading<br>3. Burnishing<br>4. Plan title<br>5. Scale identification | | Display examples of various methods of highlighting a floor plan. | Book 4, p. 278<br>Book 6, p. 209 |

IX. STANDARD CONCRETE SLAB FOUNDATION PLAN WITH DETAILS — 15 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student will be able to: | IX. STANDARD CONCRETE SLAB FOUNDATION PLAN WITH DETAILS | Read chapter.<br>Answer study questions. | | Book 4, p. 283<br>Book 6, p. 327<br>Book 7, p. 183<br>Book 8, p. 225<br>Book 9, p. 170<br>Book 10, p. 98 |
| | A. Slab Plan Layout<br>1. Tracing perimeter, elevation changes, and plumbing details from floor plan | Prepare and submit a complete slab foundation plan that will correspond to the floor plan from the previous unit. | Select slab foundation plans for display that will depict various problems in slab plan layout. | |
| establish the size and location of concrete beams. | 2. Establish size and location of concrete beams<br>3. Locate beam detail symbols | | | |
| properly dimension a slab foundation plan. | 4. Dimension<br>a. Intermediate<br>(1) Edge of slab to center of beam<br>(2) Edge of slab to elevation changes<br>(3) Locate special features<br>b. Overall<br>c. Notes<br>(1) Local<br>(2) General | | Demonstrate the correct method for dimensioning the slab plan. | |
| construct necessary beam details relating to a specific slab foundation plan. | B. Beam Details<br>1. Exterior bearing<br>2. Interior bearing<br>3. Garage to house<br>4. Exterior garage<br>5. House to porch<br>6. Porch end | | Prepare handout sheet giving representations of various beam details. | Book 16, p. 40<br>Book 7, pp. 167-171 |

25

UNIT IX. STANDARD CONCRETE SLAB FOUNDATION PLAN WITH DETAILS (Continued)

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| | 7. Fireplace<br>8. Special features | | | |
| produce a completed slab foundation plan with all necessary details and highlighting. | C. Highlighting of Slab Plan<br>1. Symbols<br>2. Shading<br>3. Plan title<br>4. Space identification<br>5. Scale identification | Unit Test | | |

**UNIT X. ROOF AND PLOT PLAN** 15 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | X. ROOF AND PLOT PLAN | Read chapter.<br>Answer study questions. | | Book 2, pp. 2 & 2A<br>Book 2, pp. 4 & 4A |
| | A. Select Scale | Draw and submit a proper and complete roof and plot plan that corresponds to the preceding floor and slab plan. | Prepare a check sheet for student's use to aid in the completion of the roof and plot plan. | |
| | B. Select Property<br>1. Size<br>2. Natural grade elevation | | | Book 4, pp. 209 & 267<br>Book 5, pp. 425 & 488<br>Book 6, p. 288<br>Book 8, p. 153 |
| layout property lines. | C. Layout Property Lines<br>1. Bearing<br>2. Length | | | |
| | D. Locate Meridian Arrow (North Direction) | | | Book 10, pp. 93-97 |
| locate structure on site. | E. Locate Structure on Property Site<br>1. Setback requirements<br>2. Draw exterior walls as hidden lines<br>3. Select roof construction type<br>4. Draw roof lines solid | | Discuss the positioning of the structure on the lot | Book 11, p. 18 |
| | F. Dimension the Structure<br>1. Overall width and depth<br>2. Distance from house to two adjacent property lines | | | |
| design and position driveways, sidewalks, and patios. | G. Locate all Driveways, Sidewalks, and Patios<br>1. Surface I.D.<br>2. Sizes | | | |

X. ROOF AND PLOT PLAN (Continued)

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| layout all utility lines and easements. | H. Locate Utility Lines and Easements<br>1. Gas<br>2. Electricity<br>3. Water<br>4. Sewage | | Demonstrate the proper method for showing utility lines and easements. | Book 4, p. 102 |
| | I. Locate streets<br>1. Center lines<br>2. Width | | | |
| correctly label and dimension roof and plot plan. | J. Labeling<br>1. House slab finish grade<br>2. Garage finish grade<br>3. Sidewalks, driveways, and patios<br>4. Utility easements<br>5. Lot number<br>6. Unit number<br>7. Street name and address<br>8. Subdividion name<br>9. Special features<br>10. Plan title<br>11. Scale identification | | Demonstrate correct labeling techniques.<br>Discuss and demonstrate possible special features and symbols. | Appendix 5 |
| | | Unit test | | |

UNIT XI. TYPICAL WALL SECTION 15 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | XI. Typical Wall Section | Read chapter.<br>Answer study questions. | | |
| | A. Exterior Wall Footing | | | Book 2, pp. 7-13<br>Book 3, pp. 7-9 |
| recognize and draw correct concrete footings. | 1. Footing with masonry shelf<br>2. Footing for frame structure | | | |
| | B. Interior Wall Footing | Draw and submit a wall section typical to their particular structures. | Illustrate, using small scale structural models, a typical wall framing. | Book 4, pp. 270-271<br>Book 4, pp. 234-237 |
| | C. Exterior Wall Construction | | | |
| | 1. Masonry<br>2. Frame | | | |
| | D. Interior Wall Construction | | Display conventional building materials. | Book 10, p. 109 |
| dimension, label, and note all pertinent parts of a structure. | E. Section through Door/ Window Openings | | | |
| | F. Joists | | | |
| | 1. Floor<br>2. Ceiling | | | |
| | G. Rafters | | Discuss conventional building materials and construction techniques. | Book 4, p. 170 |
| | 1. Cut roof<br>2. Truss | | | |
| | H. Bracing | | | |
| | 1. Bridging<br>2. Wind<br>3. Strong back | | | |

UNIT XI. TYPICAL WALL SECTION (Continued)

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| | I. Roof | | | Book 6, p. 437<br>Book 17, p. 58 |
| | 1. Sheathing | | | |
| | 2. Felt | | | |
| | 3. Shingles | | | |
| | J. Cornice | | | |
| | 1. Overhang size | | | Book 4, p. 408 |
| | 2. Facia | | | Book 6, p. 318 |
| | 3. Frieze | | | Book 7, p. 209 |
| | 4. Soffit | | | Book 8, p. 180 |
| | 5. Lookouts | | | Book 16, p. 226 |
| | 6. Nailers | | | Book 17, p. 64 |
| | 7. Trim | | | |
| | K. Insulation | | | |
| | 1. Attic | | | |
| | 2. Walls | | | |
| | L. Interior Wall Material | | | |
| | 1. Gypsum board | | | |
| | 2. Wood | | | |
| | M. Ceiling Material | | | |
| | 1. Gypsum board | | | |
| | 2. Wood | | | |
| | 3. Accoustic | | | |
| | N. Interior Trim | | | |
| | 1. Base | | | |
| | 2. Shoe | | | |
| | 3. Ceiling Mold | | | |
| | O. Labeling, Dimensioning, and Symbols | | | Book 9, p. 141 |
| | 1. Slab | | | |
| | 2. Walls | | | |
| | 3. Roof | Unit test | | |

UNIT XII. ELEVATIONS 15 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | XII. ELEVATIONS (SINGLE-STORY)<br>A. Front View | Read chapter.<br>Answer study questions. | | Book 3, pp. 12A & 13A<br>Book 4, p. 270<br>Book 5, pp. 470 & 490<br>Book 6, p. 234<br>Book 7, p. 307<br>Book 8, p. 148<br>Book 9, p. 162<br>Book 14, p. 80<br>Book 16, p. 436 |
| layout and make completed elevation drawings of their structures. | B. Rear View<br>C. Right Sideview<br>D. Left Sideview<br>E. Technical Data Required | Draw and submit complete sets of elevation drawings depicting their particular structure. | Display several structure styles showing exterior building features. | |
| identify and label all features of their elevation drawings. | 1. Ground line<br>2. Finished floorline<br>3. Frieze board<br>4. Fascia board<br>5. Windows<br>6. Doors<br>7. Roof pitch<br>8. Roof overhang<br>9. Chimney location<br>10. Special feature<br>11. Dimensioning<br>12. Notes<br>13. Scale<br>14. View identification | | Collect and display drawings showing various rendering techniques. | |
| | F. Rendering<br>1. Symbols<br>a. Brick<br>b. Siding<br>c. Roofing<br>d. Landscaping<br>2. Highlighting<br>a. Tools<br>b. Techniques | Unit test | Demonstrate correct rendering techniques and tools. | |

XIII. DETAILS 15 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| **The student should be able to:** | XIII. DETAILS | Read chapter.<br>Answer study questions. | | |
| **design and draw the required cabinets for their particular structures.** | A. Cabinets<br>1. Kitchen<br>2. Bath<br>3. Special<br>4. Storage | Draw and submit a complete set of detail drawings that correspond to their particular structure. | Collect and display drawings depicting the various details required in the average dwelling. | Book 1, p. 430<br>Book 1, p. 420<br>Book 2, pp. 4 & 4A<br>Book 3, pp. 15 & 15A<br>Book 4, p. 119 |
| **correctly draw, dimension, and note all necessary details.** | B. Fireplace<br>1. Pre-fab<br>2. Masonry<br>a. Section<br>b. Frontal view | | Discuss the construction of various detailed features and relate the construction techniques to their drawings. | Book 7, p. 137<br>Book 7, p. 259 |
| | C. Doors<br>1. Jamb<br>2. Threshold | | | Book 1, p. 341<br>Book 2, p. 5<br>Book 4, p. 246<br>Book 6, p. 324<br>Book 16, p. 484 |
| | D. Windows<br>1. Jamb<br>2. Sill | | | Book 1, p. 373<br>Book 2, pp. 6 & 7<br>Book 4, p. 243<br>Book 7, p. 236 |
| **identify the various parts and types of bracing.** | E. Special Bracing<br>1. Strong back<br>2. Wind brace<br>3. Collar brace<br>4. Bridging | | Using scale models, display and discuss the various types of bracing. | |
| | F. Waste System<br>1. Septic<br>2. Treatment | | Discuss the aspects of the various waste systems. | Book 1, p. 100 |
| | G. Water Well | | | Book 1, p. 589 |
| | H. Special Features | Unit test | | |

XIV. SPECIFICATIONS 10 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | XIV. SPECIFICATIONS | Read chapter.<br>Answer study questions. | | Book 4, p. 430 |
| | A. General Information | | | Book 5, p. 527 |
| | 1. Type of construction<br>2. Location<br>3. Sponsor | | | Book 6, p. 530<br>Book 6, Workbook p. 77<br>Book 7, p. 415 |
| complete a standard FHA description of materials form, as it pertains to his/her particular building plans. | B. Materials | Complete a standard FHA description materials form and attach to plan. | Obtain and distribute standard FHA description of materials form. | Book 8, p. 154<br>Book 10, p. 87<br>Book 12, p. 227<br>Book 16, p. 534 |
| | 1. Sizes<br>2. Types<br>3. Quality | Calculate cash allowance for items included in the structure. | Discuss step-by-step the information necessary to complete the FHA form. | |
| calculate quantitites necessary to complete his/her particular plans. | C. Equipment | | Display manufacturers' catalogs. | |
| | 1. Sizes<br>2. Make and model<br>3. Quantity | | | |
| | D. Construction Operation | | | |
| | 1. Fabrication<br>2. Installation | | | |
| | E. Specified Workmanship | | | |
| | F. Minimum Requirements | Unit test | | |

UNIT XV. COMPUTER-AIDED DRAFTING (CAD) 10 Hours

| OBJECTIVES | TOPICS | STUDENT ACTIVITIES | TEACHER ACTIVITIES | RESOURCES |
|---|---|---|---|---|
| The student should be able to: | XV. COMPUTER-AIDED DRAFTING | Read unit.<br>Answer study questions. | | Book 6, p. 162<br>Book 11, p. 17<br>Book 9, p. 217<br>Book 13, p. 147<br>Book 11, p. 235 |
| | A. Definition of Terms | | | |
| understand how digitizers, plotters, and CRT video display units function. | 1. Computer<br>2. Design drafter<br>3. Documents<br>4. Automated design<br>5. Programmer<br>6. Program<br>7. Computer language<br>8. On-line operation<br>9. Off-line operation | Record definitions. | Lecture on computer-related terms.<br>Assign definitions.<br>Display examples of CAD.<br>Arrange a field trip to a local industry that uses CAD. | Book 13, p. 3 |
| understand how computers function in computer graphics. | B. Function of Computer-Aided Design in Drafting | | | |
| | C. How the Computer Functions in Computer Graphics | | Lecture on computer functions. | Book 11, pp. 19-48 |
| | D. Digitizer<br>1. Manual digitizer<br>2. Mechanized or automated digitizer | Participate in class discussion. | Show a film on CAD and lead a discussion relating the effect of the computer on drafting. | Book 11, p. 20 |
| demonstrate an understanding of the effects of computers on the drafting profession. | E. Artwork Generators | | | |
| | F. Automated Drafting Machines | Work problems assigned. | Assign problems. | Appendix #11, p.____ |
| | G. Plotters | | | |
| | H. Computer Graphics and the Future of Drafting | Unit Test | | Book 11, p. 6 |

APPENDIX I

TOOL LIST

ARCHITECTURAL DRAFTING

TOOLS AND EQUIPMENT

| Item | Quantity | Description |
|---|---|---|
| Drafting table | 25 | 30" x 42" with storage drawers |
| Drafting stools | 26 | Steel frame, 30" |
| Blueprint machine | 1 | 60" |
| Tracing table | 1 | 24" x 36" back light surface |
| Paper cutter | 1 | 36" |
| Pencil sharpener | 1 | General purpose |
| Supply storage cabinet | 1 | Metal |
| Drawing storage cabinet | 1 | Metal or wood |
| Teacher's desk with chair | 1 | Metal or wood |
| Drawing board | 25 | 24" x 36" with metal edge |
| Computer Hardware | | |
| Computer | 5 | IBM PC or equivalent, 2 Serial RS-232C Interface ports, 384 K bytes memory, one parallel printer port, monochromatic monitor and interface |
| Hard disk drive | 5 | 5 mega byte |
| Digitizer | 5 | Houston Instrument HIPAD Model DT 11AA or equivalent |
| Plotter | 1 | Houston Instrument HIPLOT Model DMP-40 or equivalent |
| Cables | | As needed for equipment |
| Printer multiplexer | 2 | 5 channel |
| Printer | 1 | Dot matrix |
| Computer Software | | |
| CAD software | | AutoCad Software by Autodesk, Inc. |

In addition to textbooks, the architectural drafting room should have at least one set of Sweet's Catalogs and one Architectural Graphic Standards book.

The following is a list of tools and equipment to be furnished by the student.

Drawing instrument set
45° triangle
30°-60° triangle
Architect's scale
Engineer's scale
House plan template
Dusting brush
Erasing shield
Ames lettering set
Protractor
Irregular curve
Drafting tape
Erasers
Dusting powders
Pentel pencil
Pentel leads--NB, 2H, 4H

# INDUSTRIAL ARTS EQUIPMENT LIST

## DRAFTING

### 1. Audiovisual Equipment

Chalkboard Compass
Display Board
Blackboard Divider
Blackboard Drafting Machine, arm type
Instructor's Projection Box, plastic
Student's Projection Box, plastic
Filmstrip (35mm) and Slide (2" x 2") Projector
Motion Picture Projector, sound
Overhead Projector
Chalkboard Protractor
Chalkboard Scale (demonstration)
Projection Screen
Chalkboard Triangle, 30° - 60°
Chalkboard Triangle, 45°

### 2. Instruments and Tools

Draftsman's Duster Brush
Compass and Divider (set)
Beam Compass
Drop Bow Compass
Irregular Curve (set)
Rule Curve (adjustable)
Paper Cutter
Drafting Tape Dispenser
Proportional Divider
Drafting Machines (arm type)
Eraser Shields
Electric Eraser
Fountain Pen (technical set)
Geometric Shapes (set)
Lettering Guide Line Instrument
Lettering Set
Arkansas Oilstone
Drafting Pantograph
Pen Holder
Pen Set
Speedball Pen (set)
Mechanical Pencil Pointer
Draftsman's Pencil Sharpener
Standard Pencil Sharpener
Semi-circular Protractor
Drafting Instrument Repair Kit

Architect's Scale
Civil Engineer's Decimal Scale
Metric Scale
Scissors
Sign-maker Set
Parallel Ruling Straight Edge
Architectural Template
Electronic Template
Isometric Circle Template
Isometric Circle Template, large
Large Circle Template
Nuts and Bolts Template
Triangles, 30°, 60° (10" and 12")
Triangle, 45°, (9")
Triangle, 45° (12")
Adjustable Triangle, (10")
T-Square

3. Machines

Electric Erasing Machine
Drafting Machine (arm or tracking type) (18")
Drafting Machine (arm or tracking type) (24")
Reproduction Machine (dry type)
Reproduction Machine (moist type)
Electric Marking Tool
Electric Pencil Sharpener

4. General Furnishings

Drafting Board
Bookcase
Push Broom
Bench Broom
Filing Cabinet
Storage Cabinet
Drafting File
Printing Frame
Dust Pan
Magazine Rack
Student's Adjustable Stool
Drafting Table
Overhead Projector Table
Planning Table

5. Miscellaneous

Inside Caliper (6")
Outside Caliper (6")

Industrial Arts Equipment List (Continued)

Letter Die (set)
Number Die (set)
Extension Cord
Fire Extinguisher
First-Aid Kit
Wire and Sheet Metal Gauge (American)
Wire and Sheet Metal Gauge (U.S.S.)
Clay Hammer (16 oz.)
Carving Knife (set)
Outside Micrometer (1")
Straight Nose Pliers
Paper Punch
Flexible Steel Tape Rule (12')
Flexible Steel Tape Rule (100')
Phillips Screwdriver (set)
Standard Bit Screwdriver (round blade) (set)
Standard Bit Screwdriver (square blade) (set)
Combination Set Square (with protractor and center head)
Hand Stapler
Sliding T Bevel

6. Computer Hardware

Computer
Hard disk drive
Digitizer
Plotter
Cables
Printer multiplexer
Printer

7. Computer Software

APPENDIX 2

SAFETY

## DRAFTING ROOM SAFETY

As it is in industry, safety is a primary concern in the drafting classroom. The most important factor in safety is the attitude of the worker. Before proceeding further, read the following safety precautions pertaining to the use of drafting equipment, machines, and material.

Adequate clearance around drafting tables must be kept according to fire and safety regulations.

Stools and chairs must be kept out of aisles and placed under tables and desks when not in use.

Stools must be used so that they rest on all four legs. A "tilted stool" may cause a serious fall.

Adjustments to drafting tables should be supervised by the instructor. Fingers must be kept clear of the top and hinged area.

Drafting machine arms, T-square blades, and other equipment must not block aisles.

Dividers, compass, ruling pen, and pencils must be handled carefully as they are sources of puncture wounds.

Points of thumb tacks often break off from the head and remain sticking out of the drafting board. These points should be removed immediately from the board as they may cause injury to the hands. Tape is recommended for mounting paper on drafting boards.

Pencils, erasers, and other small articles should be picked up from the floor in order to prevent them from becoming the cause of a serious fall.

Pencils, thumb tacks, and other small articles should not be placed or held in the mouth. These items may be swallowed or cause injury and infection.

Chemicals must be kept away from the eyes, nose, and throat and should be used only in an area where adequate ventilation can be provided.

Hands and fingers must be kept clear of the paper cutter blade.

The blade of the paper cutter must be kept in the "down" position when the paper cutter is not in use.

Hands must be kept clear of the light tube and belt feeding mechanism of the Diazo whiteprinter in order to avoid crushed fingers.

Playing, scuffling, and other forms of "horseplay," are extremely dangerous. A playful push may cause a bad cut or bruise from contact with the sharp edge of a piece of furniture or equipment.

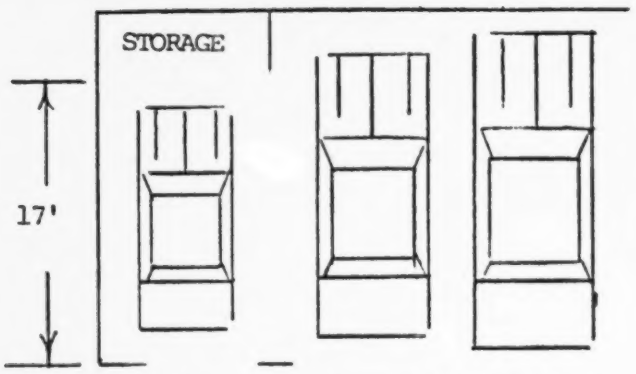
Articles and materials must be stored in proper lockers and shelves. Items placed on top of lockers may fall, causing injuries.

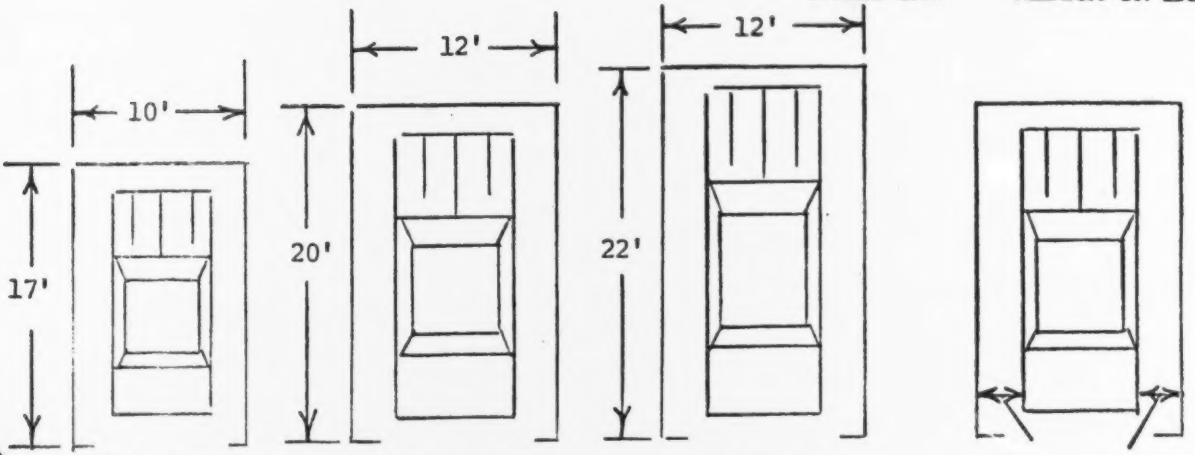
Any injury, no matter how slight, should be reported to the instructor immediately. Infection can result from uncared for minor cuts and scratches.

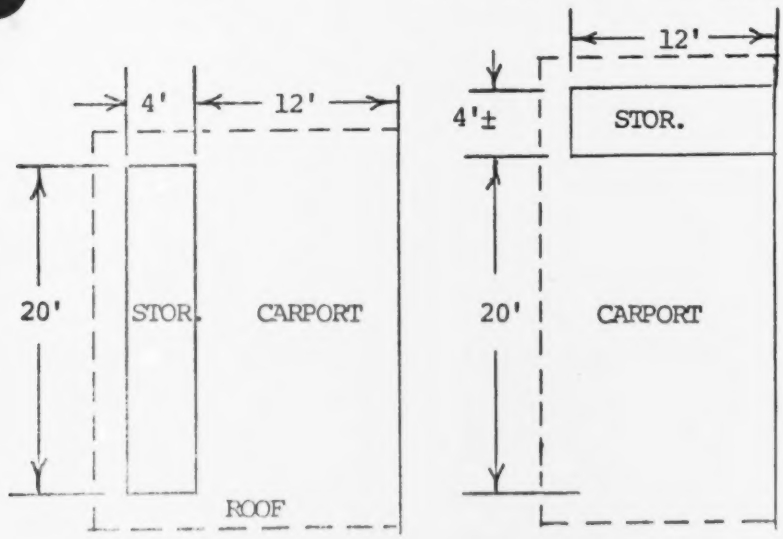
APPENDIX 3

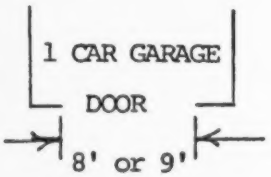
TEACHING AIDS

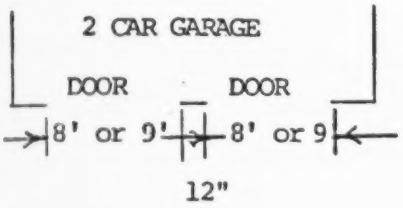
PRIORITIES IN PLANNING
FOR CARS AND STORAGE

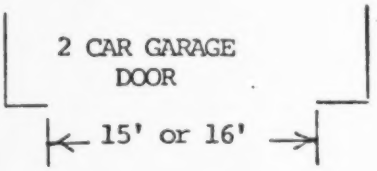


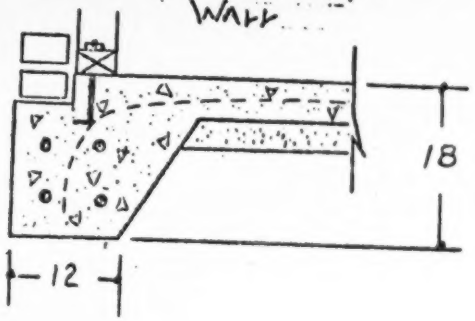



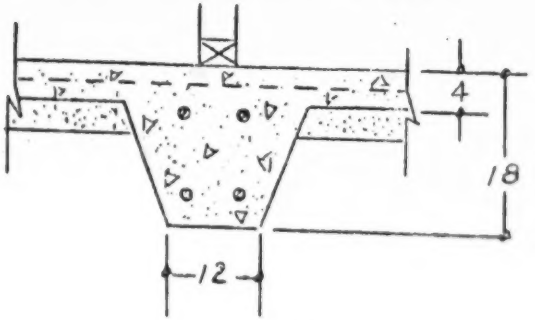



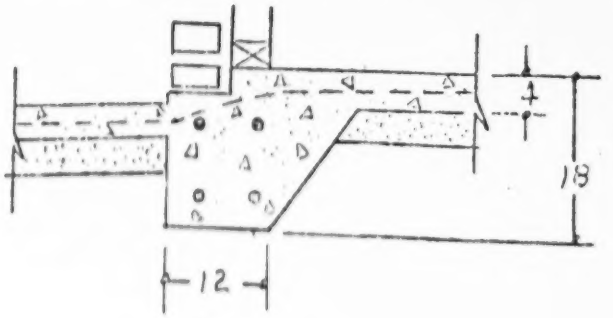
EXTERIOR BERING WALL



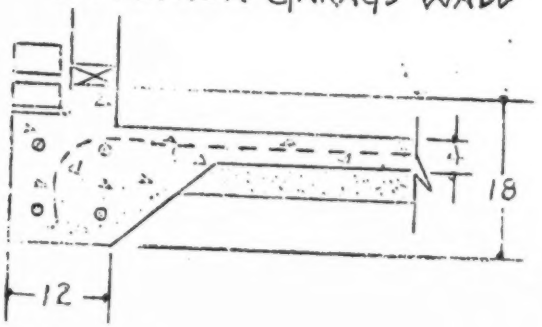

INTERIOR BERING WALL



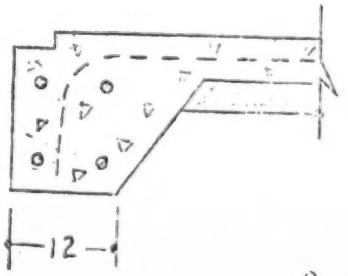

PORCH TO MAIN FLOOR



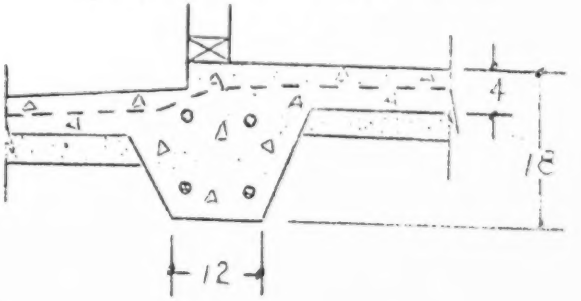

EXTERIOR GARAGE WALL




GARAGE OPENING

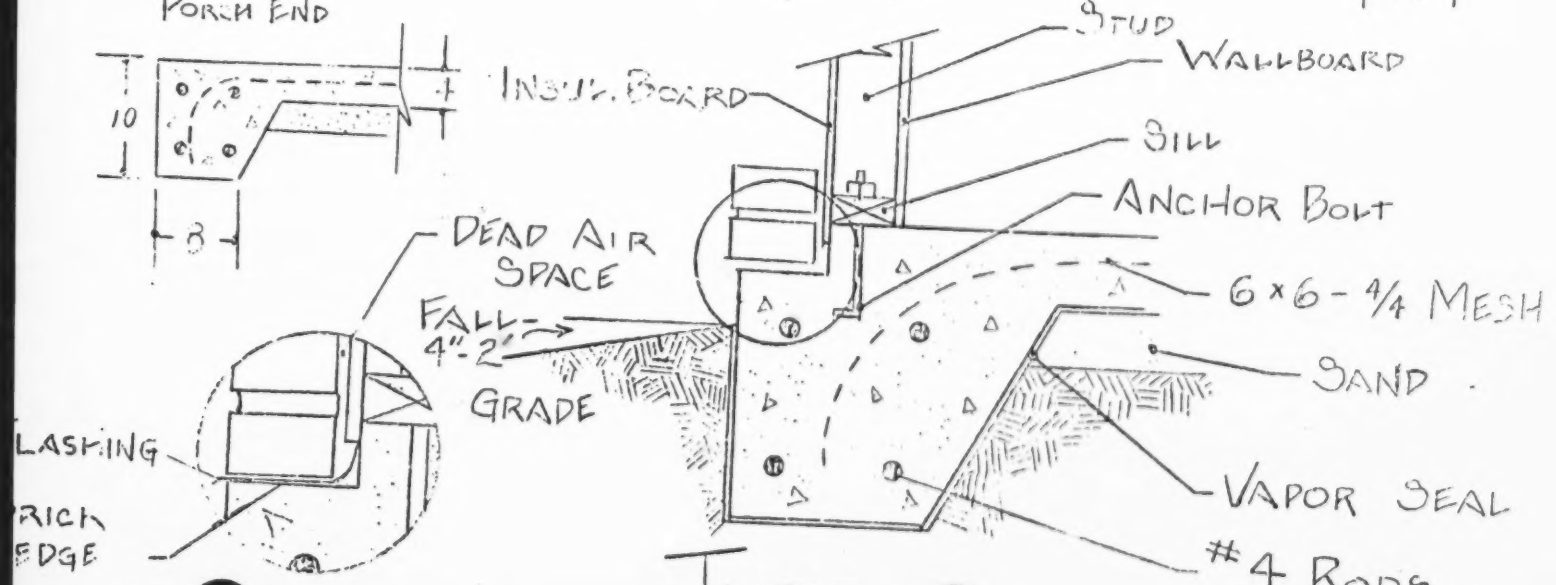



GARAGE WALL TO HOUSE




PORCH END




TYPICAL

PLANNING THE INDIVIDUAL
ROOMS OF THE HOUSE

I. Principle areas of the house

A. The living area includes the living room, dining room, library, and entrance halls.
B. The sleeping area includes the bedrooms, bathrooms, and sleeping porches.
C. The work area includes the kitchen, laundry, and storerooms.

II. Planning for good traffic circulation around the living room area

A. It should be located near the front entrance but should not lead directly into it.
B. It should not serve as passage to other rooms.
C. If it must allow access directly to bedrooms, an alternate way should be provided to reach kitchen and dining areas.

III. Planning rooms to accommodate furniture

A. Each room should be planned to accommodate pieces of furniture that are ordinarily used with it.
B. The location of the rooms in regard to the points of the compass is very important.
C. The TV set should be placed where rays of sun will not interfere with viewing.

IV. Living room

A. The living room should be well proportioned, length to width.
B. Wall areas should be large enough to accommodate large pieces of furniture.
C. Windows should be well placed for ventilation, reading, writing, or conversation.
D. Furniture should be carefully planned and arranged so that the important pieces are related to each other and to the whole plan.
E. Wall areas should not be cut up by too many openings.
F. Heating registers, radiators, and electrical outlets should be located where they will not interfere with furniture.
G. If the room is narrow and there is a fireplace in the long wall, there should be a wall space directly opposite large enough to take a group of conversational furniture.
H. The fireplace must be carefully located and be out of the normal traffic lanes.
I. Window sills should be below the eye level of a seated person, so that a full view can be obtained.

J. An ash dump should be provided in the fireplace.
K. Circulation through the living room should be direct, to take up as little floor space as possible.
L. A large opening in the wall opposite the fireplace opens the heart of the room to the guests.
M. A coat closet should be included.
N. The front door should be well located.
O. The necessary furniture groups should not block traffic.
P. Privacy should be provided.
Q. Noise must be considered.
R. The living room should be planned to accommodate the furniture and rugs.

V. Kitchen

A. Planning
1. Avoid miscellaneous traffic through the kitchen work area
2. Well located doors and windows increase the efficiency of the complete plan.
3. There should be as many windows as possible without reducing the required amount of cabinet space, with this window equal to 15 to 25 percent of the kitchen floor area.
4. If possible, have only two doors, one to the outside and locate both at the same end of the room away from the work line.
5. Nonworking areas should be separated from the working areas.
6. When the kitchen plan develops corners formed by adjacent cabinets, the corner space is comparatively useless because of its lack of accessibility.
7. Provision should be made for replacement of old equipment with sufficient space for larger sizes.
8. Try to arrange the working centers in a triangle--refrigerator, sink, and range.
9. Arrange a continuous line of appliances with working counters and cupboards between so that work moves smoothly from one work center to another.
10. Locate the meal table, planning desk, and other extras outside the line of work.
11. Provide generous counter space at each work center for comfort and convenience and as a provision for adding new equipment in the future.
12. Have at least one double-convenience outlet at each counter to take care of electrical appliances.
13. Plan your cupboards for the articles they are to store.
14. When planning the overall size of the room, be sure there is space for two people to work together without crowding.
15. For jobs that are done most comfortable at levels lower than than 36-inch standard counter height, plan pull-out boards in the base cabinets.

16. A table on wheels is essential for saving space and labor for rolling dishes and food to and from the table and for providing extra work space wherever needed.
17. The kitchen work should face the play yard of young children.
18. If you like outdoor meals, you will want the kitchen where you can have an adjoining patio, porch, or attractive yard.

B. Recommendations for values of kitchen illumination
   1. General illumination, 10-foot candles
   2. Supplementary illumination, 40-foot candles

C. Three major work centers
   1. Storage and preparation
   2. Washing and cleaning
   3. Cooking and serving

D. Basic organization plans of these work centers
   1. U-shaped
   2. L-shaped
   3. Two-wall or corridor-type
   4. One wall
   5. Combinations of 1 and 2

E. Base cabinets are in three principal types
   1. All drawer unit
   2. All cupboard
   3. Drawer and/or cupboard type

VI. Sun parlor, library, study, hobby room, or den

A. Characteristics
   1. Small enough to accommodate desk and chair
   2. One comfortable reading and relaxation chair with good light
   3. Sofa large enough to relax upon

B. Principal purpose of the room is seclusion and comfort

VII. Entrances and hallways

A. Essentials
   1. Privacy from living rooms
   2. Directly accessible to all active parts of house
   3. Closet to accommodate coats, hats, etc.

VIII. Basement or utility rooms (utility or furnace or furnace room)

A. Location and size
   1. Near to the chimney stack so that a long run of chimney pipe is unnecessary

2. Near the center of heat pipe runs for balanced distribution of heat
3. An outside wall for natural lighting, ventilation, and fuel delivery
4. Near basement stairs to grade level
5. Accessible to service stairs

B. Equipment
1. Heating and air-conditioning equipment, domestic hot water, incinerators, refrigeration compressors
2. Gas, electric, and water meters, electric service panel board, oil tank
3. Water pump and supply tank, if required
4. Sump pump, if required

C. General suggestions
1. Walls preferable solid masonry for fireproofing and soundproofing values
2. Ceiling plastered or finished with other fire-retardant construction for soundproofing and fireproofing
3. Easily cleaned floor surface
4. Ventilation for combustion with a fixed opening equal to total chimney fuel area

IX. Fuel storage

A. Location and size
1. Solid fuels in closed bin adjacent to furnace room
2. Oil preferably stored underground and outside of the basement

B. Equipment
1. Bin or hopper-fed stoker for automatic heat with coal
2. Coal and wood chute opening from driveway

C. General suggestions
1. Walls, partitions, and ceiling fireproof and dustproof, preferably of solid masonry
2. Sloped floors to feed toward access door
3. Walls, partitions, and ceiling fireproof, soundproof, fumeproof, and dustproof

X. Basement laundry

A. Location and size
1. Provision for laundry chute from hall or bathroom
2. Near outside entrance door and drying yard
3. Near service stairs
4. Near plumbing of upstairs kitchen or bathroom

B. Equipment
1. Clothes chutes, laundry tubs, washing machine, clothes dryer, ironing board, hot plate, work table, or cabinet top for sorting

C. General suggestions
   1. Floor and drain provided
   2. Sanitary walls, floors and ceiling
   3. Provision for natural lighting
   4. Provision for artificial lighting
   5. Good ventilation
   6. Work areas well organized for sequence of work

XI. Utility Rooms

A. Location and size
   1. Near garage or outside entrance, near service entrance, or near recreation room

B. Equipment
   1. Showers, toilets, and lavatories

C. General suggestions
   1. Sanitary walls, floors, and ceilings
   2. Adequate ventilation
   3. Provisions for natural light
   4. Soundproof walls if near recreation room

XII. Storage Areas

A. Location and size
   1. Storm windows and screens
   2. Near the outside door entrance
   3. Luggage
   4. Garden tools
   5. Clothing and furs

XIII. Recreation Rooms

A. Adult recreation room

B. Children's playroom

C. Hobby rooms

XIV. Laundry

A. Laundry equipment
   1. Washing machine
   2. Clothes dryer
   3. Ironer
   4. Ironing board

B. Sequence of work centers
   1. Receiving and sorting
   2. Cleaning center
   3. Drying center
   4. Finishing center

C. Considerations in planning
1. Laundry as near the outside door as possible
2. Convenient location of washer and dryer
3. Clothes chute and laundry sorting table in close proximity
4. 5 ft. 9 in. to 7 ft. 0 in. long sorting table
5. Ironing center
6. Sewing center
7. Adequate storage space for laundry

D. Electrical wiring
1. Three double convenience outlets for use of washer, dryer, etc.
2. Central ceiling fixture provided for general lighting

XV. Closets and Storage Rooms

A. Specialized storage spaces in form of closets
1. Bed closets
2. Broom closets
3. Cedar closets
4. China closets
5. Clothes closets
6. Coat closets
7. Linen closets
8. Bathroom supply

XVI. Dining Room, Dining Alcove, or Dinette

A. Dining room grouping
1. To make the division used as inconspicuous as possible
2. To emphasize the division, creating the effect of two separate rooms

B. Wherever you plan to eat you will need
1. Adequate lanes of traffic for serving
2. Provision for serving
3. Good close-at-hand storage space for linens, silver, glassware, and china
4. Comfortable space for social entertainiment of guests

C. Dining alcove
   1. Used in small families of not more than four people
   2. Desirable minimum size of this alcove should be about 7 ft. by 9 ft.

D. Dinette--two most common schemes
   1. To make the dining area an extension of the living room without any separation except by a sliding curtain, etc.
   2. To make two rooms in the form of an "L" with the dining area appearing like a large alcove or continuation of the living room around a corner

E. Outdoor dining area
   1. Accommodation must be made for the serving of the food directly from the kitchen, from an outdoor fireplace, grill, or in picnic style.
   2. Provision must be made for outdoor privacy.

F. Review of principles involved in planning dining room or dining area
   1. Access from the kitchen serving area to the dining table should be short and direct.
   2. The size must be adequate for the furniture intended.
   3. Wall areas must be large enough to accommodate furniture.
   4. Windows must be well arranged for view, light, and ventilation.
   5. The door from the kitchen must be placed where it does not interfere with guests seated at the table and arranged in such a manner that those seated at the table do not have a view of the entire kitchen working area.

XVI. Bedrooms

A. Bedrooms should be arranged in the house plan to get the benefit of cross ventilation in the summer.

B. Bedroom doors should always open out of the hall--never out of another bedroom.

C. Average home should provide a minimum of three bedrooms.

D. Traffic within the bedroom should be carefully planned.

E. Review of principles of bedroom planning
   1. The wall areas must be large enough to accommodate the desired furnishings.
   2. Doors should be located to open back against a wall and not to interfere with furniture and other doors.
   3. Windows should be located to afford natural light and cross ventilation.

4. Dressing tables and mirrors should be placed so that natural light from a window will light the face of a person facing the mirror.
5. Radiators, registers, and electrical outlets should not be located behind furniture.
6. The floor area must be adequate for the furniture.
7. The bathroom should be conveniently located near the bedroom.
8. Bathroom noises should be insulated from the bedroom.
9. Bedrooms should be located in quiet areas of the house.
10. A light switch for a hall light should be located in wall outside the bedroom door, or a night-light arrangement should be used for the hallway.

XVII. Bathroom

A. Fixtures arranged to form two separate units
   1. A powder room accessible to the living areas
   2. A main bathroom near the bedrooms

B. Principles suggested
   1. The door should be arranged to screen the water closet from sight when the door is open or being opened.
   2. Bathrooms serving two adjoining rooms should be entered from the hall.
   3. Bathrooms should not be located directly at the head of the stairs.
   4. Bathroom doors should be isolated as far as possible from the bedroom doors.

C. When planning the fixture arrangement
   1. Windows over the bathtub are drafty for the bather
   2. Doors should be arranged to screen and conceal the water closet; should be arranged so that they may be left open for ventilation.
   3. The view into the bathroom should be of the lavatory or tub, not the water closet.
   4. The lavatory should be placed between the tub and the water closet.
   5. The fixtures should be arranged to provide maximum free wall space for the portable accessories.
   6. Storage cabinets should be provided for storing supplies close to the place where they are used.
   7. Accessories in the form of holders and racks should be conveniently placed for soap, toothbrushes, etc.
   8. Lightings should be supplied by a diffusing fixture which is centrally located to supply light for the whole room.

☐ Proposed Construction

☐ Under Construction

# DESCRIPTION OF MATERIALS

No. _____ (To be inserted by FHA or VA)

*Property address* _____ *City* _____ *State* _____

*Mortgagor or Sponsor* _____ (Name) _____ (Address)

*Contractor or Builder* _____ (Name) _____ (Address)

## INSTRUCTIONS

1. For additional information on how this form is to be submitted, number of copies, etc., see the instructions applicable to the FHA Application for Mortgage Insurance or VA Request for Determination of Reasonable Value, as the case may be.
2. Describe all materials and equipment to be used, whether or not shown on the drawings, by marking an X in each appropriate check box and entering the information called for in each space. If space is inadequate, enter "See misc." and describe under item 27 or on an attached sheet. THE USE OF PAINT CONTAINING MORE THAN ONE PERCENT LEAD BY WEIGHT IS PROHIBITED.
3. Work not specifically described or shown will not be considered unless required, then the minimum acceptable will be assumed. Work exceeding minimum requirements cannot be considered unless specifically described.
4. Include no alternates, "or equal" phrases, or contradictory items. (Consideration of a request for acceptance of substitute materials or equipment is not thereby precluded.)
5. Include signatures required at the end of this form.
6. The construction shall be completed in compliance with the related drawings and specifications, as amended during processing. The specifications include this Description of Materials and the applicable Minimum Property Standards.

**1. EXCAVATION:**

Bearing soil, type _____

**2. FOUNDATIONS:**

Footings: concrete mix _____; strength psi _____ Reinforcing _____

Foundation wall: material _____ Reinforcing _____

Interior foundation wall: material _____ Party foundation wall _____

Columns: material and sizes _____ Piers: material and reinforcing _____

Girders: material and sizes _____ Sills: material _____

Basement entrance areaway _____ Window areaways _____

Waterproofing _____ Footing drains _____

Termite protection _____

Basementless space: ground cover _____; insulation _____; foundation vents _____

Special foundations _____

Additional information: _____

**3. CHIMNEYS:**

Material _____ Prefabricated *(make and size)* _____

Flue lining: material _____ Heater flue size _____ Fireplace flue size _____

Vents *(material and size)*: gas or oil heater _____; water heater _____

Additional information: _____

**4. FIREPLACES:**

Type: ☐ solid fuel, ☐ gas-burning, ☐ circulator *(make and size)* _____ Ash dump and clean-out _____

Fireplace: facing _____; lining _____; hearth _____; mantel _____

Additional information: _____

**5. EXTERIOR WALLS:**

Wood frame: wood grade, and species _____ ☐ Corner bracing Building paper or felt _____

Sheathing _____; thickness _____ width _____; ☐ solid; ☐ spaced _____" o. c.; ☐ diagonal; _____

Siding _____; grade _____ type _____; size _____; exposure _____"; fastening _____

Shingles _____; grade _____; type _____; size _____; exposure _____"; fastening _____

Stucco _____; thickness _____"; Lath _____; weight _____ lb.

Masonry veneer _____ Sills _____ Lintels _____ Base flashing _____

Masonry: ☐ solid ☐ faced ☐ stuccoed; total wall thickness _____"; facing thickness _____"; facing material _____

Backup material _____; thickness _____"; bonding _____

Door sills _____ Window sills _____ Lintels _____ Base flashing _____

Interior surfaces: dampproofing, _____ coats of _____; furring _____

Additional information: _____

Exterior painting: material _____; number of coats _____

Gable wall construction: ☐ same as main walls, ☐ other construction _____

**6. FLOOR FRAMING:**

Joists: wood, grade, and species _____; other _____; bridging _____; anchors _____

Concrete slab: ☐ basement floor, ☐ first floor, ☐ ground supported, ☐ self-supporting; mix _____; thickness _____"; reinforcing _____; insulation _____; membrane _____

Fill under slab: material _____; thickness _____". Additional information: _____

**7. SUBFLOORING:** *(Describe underflooring for special floors under item 21.)*

Material: grade and species _____; size _____; type _____

Laid: ☐ first floor, ☐ second floor, ☐ attic _____ sq. ft.; ☐ diagonal; ☐ right angles. Additional information: _____

**8. FINISH FLOORING:** *(Wood only. Describe other finish flooring under item 21.)*

| Location | Rooms | Grade | Species | Thickness | Width | Bldg. Paper | Finish |
|---|---|---|---|---|---|---|---|
| First floor | | | | | | | |
| Second floor | | | | | | | |
| Attic floor | _____ sq. ft. | | | | | | |

Additional information: _____

**9. PARTITION FRAMING:**

Studs: wood, grade, and species _____ size and spacing _____ Other _____

Additional information: _____

**10. CEILING FRAMING:**

Joists: wood, grade, and species _____ Other _____ Bridging _____

Additional information: _____

**11. ROOF FRAMING:**

Rafters: wood, grade, and species _____ Roof trusses (see detail): grade and species _____

Additional information: _____

**12. ROOFING:**

Sheathing: wood, grade, and species _____; ☑ solid; ☐ spaced _____" o.c.

Roofing _____; grade _____; size _____; type _____

Underlay _____; weight or thickness _____; size _____, fastening _____

Built-up roofing _____; number of plies _____; surfacing material _____

Flashing: material _____; gage or weight _____; ☐ gravel stops; ☐ snow guards

Additional information: _____

**13. GUTTERS AND DOWNSPOUTS:**

Gutters: material _____, gage or weight _____; size _____; shape _____

Downspouts: material _____; gage or weight _____; size _____, shape _____; number _____

Downspouts connected to: ☐ Storm sewer; ☐ sanitary sewer; ☐ dry-well; ☐ Splash blocks; material and size _____

Additional information: _____

**14. LATH AND PLASTER**

Lath ☐ walls, ☐ ceilings: material _____, weight or thickness _____ Plaster: coats _____, finish _____

Dry-wall ☐ walls, ☐ ceilings: material _____; thickness _____, finish _____;

Joint treatment _____

**15. DECORATING:** *(Paint, wallpaper, etc.)*

| Rooms | Wall Finish Material and Application | Ceiling Finish Material and Application |
|---|---|---|
| Kitchen | | |
| Bath | | |
| Other | | |

Additional information: _____

**16. INTERIOR DOORS AND TRIM:**

Doors: type _____; material _____; thickness _____

Door trim: type _____; material _____ Base: type _____; material _____; size _____

Finish: doors _____; trim _____

Other trim *(item, type and location)* _____

Additional information: _____

**17. WINDOWS:**

Windows: type _____; make _____; material _____; sash thickness _____

Glass: grade _____; ☐ sash weights; ☐ balances, type _____; head flashing _____

Trim: type _____; material _____ Paint _____; number coats _____

Weatherstripping: type _____; material _____ Storm sash, number _____

Screens: ☐ full; ☐ half; type _____; number _____; screen cloth material _____

Basement windows: type _____; material _____; screens, number _____; Storm sash, number _____

Special windows _____

Additional information: _____

**18. ENTRANCES AND EXTERIOR DETAIL:**

Main entrance door: material _____; width _____; thickness _____" Frame: material _____; thickness _____"

Other entrance doors: material _____; width _____; thickness _____" Frame: material _____; thickness _____"

Head flashing _____ Weatherstripping: type _____; saddles _____

Screen doors: thickness _____", number _____; screen cloth material _____ Storm doors: thickness _____"; number _____

Combination storm and screen doors: thickness _____"; number _____; screen cloth material _____

Shutters: ☐ hinged; ☐ fixed. Railings _____, Attic louvers _____

Exterior millwork: grade and species _____ Paint _____; number coats _____

Additional information: _____

**19. CABINETS AND INTERIOR DETAIL:**

Kitchen cabinets, wall units: material _____; lineal feet of shelves _____; shelf width _____

Base units: material _____; counter top _____; edging _____

Back and end splash _____ Finish of cabinets _____; number coats _____

Medicine cabinets: make _____; model _____

Other cabinets and built-in furniture _____

Additional information: _____

**20. STAIRS:**

| Stair | Treads | | Risers | | Stringers | | Handrail | | Balusters | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Material | Thickness | Material | Thickness | Material | Size | Material | Size | Material | Size |
| Basement | | | | | | | | | | |
| Main | | | | | | | | | | |
| Attic | | | | | | | | | | |

Disappearing: make and model number _____

Additional information: _____



84

## 21. SPECIAL FLOORS AND WAINSCOT

| | Location | Material, Color, Border, Size, Gage, Etc. | Threshold Material | Wall Base Material | Underfloor Material |
|---|---|---|---|---|---|
| Floors | Kitchen | | | | |
| | Bath | | | | |
| | | | | | |
| | | | | | |

| | Location | Material, Color, Border, Cap, Size, Gage, Etc. | Height | Height Over Tub | Height in Showers (From Floor) |
|---|---|---|---|---|---|
| Wainscot | Bath | | | | |
| | | | | | |
| | | | | | |

Bathroom accessories: ☐ Recessed; material _____; number _____; ☐ Attached; material _____; number _____
Additional information: _____

## 22. PLUMBING:

| Fixture | Number | Location | Make | Mfr's Fixture Identification No. | Size | Color |
|---|---|---|---|---|---|---|
| Sink | | | | | | |
| Lavatory | | | | | | |
| Water closet | | | | | | |
| Bathtub | | | | | | |
| Shower over tub△ | | | | | | |
| Stall shower△ | | | | | | |
| Laundry trays | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

△☐ Curtain rod △☐ Door ☐ Shower pan: material _____
Water supply: ☐ public; ☐ community system; ☐ individual (private) system.★
Sewage disposal: ☐ public; ☐ community system; ☐ individual (private) system.★
★*Show and describe individual system in complete detail in separate drawings and specifications according to requirements.*
House drain (inside): ☐ cast iron; ☐ tile; ☐ other _____ House sewer (outside): ☐ cast iron; ☐ tile; ☐ other _____
Water piping: ☐ galvanized steel, ☐ copper tubing; ☐ other _____ Sill cocks, number _____
Domestic water heater: type _____; make and model _____; heating capacity _____
_____ gph. 100° rise. Storage tank: material _____; capacity _____ gallons.
Gas service: ☐ utility company; ☐ liq. pet. gas; ☐ other _____ Gas piping: ☐ cooking; ☐ house heating.
Footing drains connected to: ☐ storm sewer, ☐ sanitary sewer; ☐ dry well. Sump pump; make and model _____
_____; capacity _____; discharges into _____

## 23. HEATING:

☐ Hot water. ☐ Steam. ☐ Vapor. ☐ One-pipe system. ☐ Two-pipe system.
☐ Radiators. ☐ Convectors. ☐ Baseboard radiation. Make and model _____
Radiant panel: ☐ floor; ☐ wall; ☐ ceiling. Panel coil: material _____
☐ Circulator. ☐ Return pump. Make and model _____; capacity _____ gpm.
Boiler: make and model _____ Output _____ Btuh.; net rating _____ Btuh.
Additional information: _____
Warm air: ☐ Gravity. ☐ Forced. Type of system _____
Duct material: supply _____; return _____ Insulation _____, thickness _____ ☐ Outside air intake.
Furnace: make and model _____ Input _____ Btuh.; output _____ Btuh.
Additional information: _____
☐ Space heater; ☐ floor furnace; ☐ wall heater. Input _____ Btuh., output _____ Btuh., number units _____
Make, model _____ Additional information: _____
Controls: make and types _____
Additional information: _____
Fuel: ☐ Coal, ☐ oil; ☐ gas; ☐ liq. pet. gas; ☐ electric; ☐ other _____; storage capacity _____
Additional information: _____
Firing equipment furnished separately: ☐ Gas burner, conversion type. ☐ Stoker: hopper feed ☐ bin feed ☐
Oil burner: ☐ pressure atomizing; ☐ vaporizing _____
Make and model _____ Control _____
Additional information: _____
Electric heating system: type _____ Input _____ watts; @ _____ volts; output _____ Btuh.
Additional information: _____
Ventilating equipment: attic fan, make and model _____; capacity _____ cfm.
kitchen exhaust fan, make and model _____
Other heating, ventilating or cooling equipment _____
_____

## 24. ELECTRIC WIRING:

Service: ☐ overhead; ☐ underground. Panel: ☐ fuse box; ☐ circuit breaker, make _____ AMP's _____ No. circuits _____
Wiring: ☐ conduit; ☐ armored cable; ☐ nonmetallic cable; ☐ knob and tube; ☐ other _____
Special outlets: ☐ range; ☐ water heater; ☐ other _____
☐ Doorbell. ☐ Chimes. Push-button locations _____ Additional information: _____
_____

## 25. LIGHTING FIXTURES:

Total number of fixtures _____ Total allowance for fixtures, typical installation, $ _____
Nontypical installation _____
Additional information: _____

**26. INSULATION:**

| Location | Thickness | Material, Type, and Method of Installation | Vapor Barrier |
|---|---|---|---|
| Roof | | | |
| Ceiling | | | |
| Wall | | | |
| Floor | | | |

**HARDWARE:** *(make, material, and finish.)*

**SPECIAL EQUIPMENT:** *(State material or make, model and quantity. Include only equipment and appliances which are acceptable by local law, custom and applicable FHA standards. Do not include items which, by established custom, are supplied by occupant and removed when he vacates premises or chattles prohibited by law from becoming realty.)*

**27. MISCELLANEOUS:** *(Describe any main dwelling materials, equipment, or construction items not shown elsewhere; or use to provide additional information where the space provided was inadequate. Always reference by item number to correspond to numbering used on this form.)*

**PORCHES:**

**TERRACES:**

**GARAGES:**

**WALKS AND DRIVEWAYS:**

Driveway: width _____; base material _____; thickness _____"; surfacing material _____; thickness _____"

Front walk: width _____; material _____; thickness _____" Service walk: width _____; material _____; thickness _____"

Steps: material _____; treads _____"; risers _____" Cheek walls _____

**OTHER ONSITE IMPROVEMENTS:**

*(Specify all exterior onsite improvements not described elsewhere, including items such as unusual grading, drainage structures, retaining walls, fence, railings, and accessory structures.)*

**LANDSCAPING, PLANTING, AND FINISH GRADING:**

Topsoil _____" thick: ☐ front yard, ☐ side yards, ☐ rear yard to _____ feet behind main building.

Lawns *(seeded, sodded, or sprigged)*: ☐ front yard _____; ☐ side yards _____, ☐ rear yard _____

Planting: ☐ as specified and shown on drawings; ☐ as follows:

| | | | |
|---|---|---|---|
| _____ Shade trees, deciduous, | _____" caliper. | _____ Evergreen trees, | _____' to _____', B & B. |
| _____ Low flowering trees, deciduous, | _____' to _____' | _____ Evergreen shrubs, | _____' to _____', B & B. |
| _____ High-growing shrubs, deciduous, | _____' to _____' | _____ Vines, 2-year | |
| _____ Medium-growing shrubs, deciduous, | _____' to _____' | | |
| _____ Low-growing shrubs, deciduous, | _____' to _____' | | |

IDENTIFICATION.—This exhibit shall be identified by the signature of the builder, or sponsor, and/or the proposed mortgagor if the latter is known at the time of application.

Date _____ Signature _____

Signature _____



86

# APPENDIX 4

## RULES, REGULATIONS, AND GRADING

Suggested Classroom Rules and Regulations Students Should Follow

1. Talking is absolutely forbidden:
   whenever the teacher is talking.
   whenever any test, examination or quiz is in progress.
   whenever any other student has the floor.
   whenever there is any kind of audiovisual presentation in progress, such as a film, filmstrip, etc.

2. Do not talk loudly.

3. Do not make disrespectful remarks to the teacher.

4. Do not bring radios, tape players, or other entertainment devices to class.

5. Do not leave paper or trash in the desks or on the floor.

6. Do not mark or otherwise deface school property. This includes desks, floors, walls, chairs, books, etc.

7. Do not move to another seat other than the one assigned to you without approval of the teacher.

8. Do not be tardy to class.

9. Do not leave the classroom without a hall pass.

10. Do not congregate in the doorway before or after class.

11. Do not enter the office and storage room, and do not open cabinets without prior permission to do so.

12. Do all work in class under the teacher's supervision. Only supplementary work or drawings may be done outside of class.

13. Complete all makeup work no later than five days after an absence.

14. Do not do work from other classes in the drafting class without special permission.

15. Other than for official meetings, do not leave to go to another teacher's room without a written note from that teacher and approval from the drafting teacher.

16. Use cover sheets for all quizzes and tests.

17. Use five minutes at the end of each hour to clean up and put away equipment and materials (only five minutes). The teacher will signal the start of this clean up.

18. Remain seated at your desk until dismissed by the teacher (not when the bell rings).

19. Be sure that your desk and stool are in order before leaving the class.

20. Enter and exit through the front door only.

ARCHITECTURAL DRAFTING

SUGGESTED STUDENT EXPECTATIONS

I. Students will be expected to bring the following materials to class each day:

1. notebook
2. pencil
3. textbook (when issued)
4. drawing equipment and materials

II. Students will be expected to be in their assigned seats and prepared to begin class when the tardy bell rings.

III. Students will be courteous and respectful to their classmates as well as to the teacher during class activities by listening while others speak.

MECHANIC'S GRADING CHART FOR ARCHITECTURAL DRAFTING

| | | Neatness | Accuracy | Line Quality | Lettering |
|---|---|---|---|---|---|
| Work is above criticism in every item | A | | | | |
| Lacking slightly in not more than one item | B | | | | |
| Lacking slightly in not more than two items | C | | | | |
| Lacking seriously in one item or generally lacking | D | | | | |
| This kind of work should be done over D.O. Grade | | Crumpled, Inaccurate | Ragged edges, Do not roll drawings | | Carelessly lettered, Omitted drawing Guide lines |

Other considerations: Industry, speed, judgment, application, general knowledge, consideration of others, and teacher.

Neatness - The absence of undesirable marks from:

1. Measuring
2. Needlepoints
3. Tacking
4. Erasures
5. Finger marks
6. High spot rubs (T-square)
7. Crumpling from rolling
8. Soil or markings in any way.

Accuracy - The measure of perfection in:

1. Tangency
2. Measurement
3. Match-line spacing
4. Dimensioning
5. Balancing views
6. Projection
7. Proportion of symbols and other representations.

Line Quality- The quality of and conventional correctness of lines:

1. Construction conforming to standards
2. Weight conforming to standards
3. Uniform weight of same class lines
4. Clean cut and not worked over
5. Limitations correct for center lines, extension, and other lines with breaks.

Lettering - The quality of the free-hand work on plate:

1. Standard inclination (vertical or incline lettering)
2. Consistent inclination
3. Standard height for purpose
4. Consistent height
5. Guide lines used consistently throughout drawing
6. Lettering composition--correct spacing
7. Work spacing as necessary to drawing
8. Spelling

APPENDIX 5

SURVEYING: ROOF AND PLOT PLAN

# UNITED STATES LAND MEASUREMENT

I. History

A. Before 1788

1. Metes and bounds

a. Beginning point

b. Different sizes

c. Not connected to a base or starting line

2. No public lands

3. Jurisdiction of state

B. After 1788

1. Township system (experimental)

2. Rectangular survey system

a. Suggested by Jefferson in 1784

b. Adopted in 1805

c. Contiguous townships six miles square

1. Thirty-six sections one-mile square

d. Areas of use

1. Northwest Territory

2. Most of land west of the Mississippi

e. Exceptions

1. Texas, parts of California and New Mexico (varas)

2. Louisiana (arpents)

3. Land grants

C. Sectional property

1. Fixed point basis (latitude and longitude)

a. True North-South (true meridian)

b. True East-West (base line)

c. Townships

1. Six-mile intervals

2. North and South of base line

d. Ranges

1. Six-mile intervals

2. East and west of principal meridian

2. Township

a. Six miles square

b. Thirty-six sections

c. Correction sections (1-6, 7, 18, 19, 30, 31 smaller)

3. Section

a. One-mile square

1. 640 acres

b. Subdivisions

1. Quarter section

a. 160 acres

b. 2640 feet square

2. Quarter-quarter section

a. 40 acres

b. 1320 feet square

3. Quarter-quarter, quarter section

a. 10 acres

b. 660 feet square

4. Quarter-quarter, quarter-quarter section

a. 2.5 acres

b. 330 feet square

II. Survey plans

A. Applications

1. Complete description of a lot

a. Size, shape and location

b. Manmade features

c. Natural features

B. Survey of lot layout

1. Symbols

2. Azimuth projection

3. Transit method

C. Land contour

1. Contour lines

2. Datum line

3. Sea level

III. Plot plan

A. Definition and purpose

B. Features

1. Natural

2. Manmade features

C. Scale

1. Recommended scale

2. Land measurement

3. Construction features

D. Media

1. Size

2. Type

3. Position

E. Symbols and notes

F. Location of structures on site

1. Code restrictions

2. Dimensioning

3. Representing the house on the drawing

G. Grading and drainage requirements

H. Legal information

1. Location

2. Additional minimum property requirements and codes

3. Zoning ordinances

a. City

b. Subdivision

I. The drawing system

1. Techniques

2. Procedures

J. Additional information

1. Technical terms

2. Abbreviations

3. FHA-VA minimum property requirements checklist

PROBLEMS:

1. Use a compass to find the azimuth of streets that surround your school.

2. Using a protractor, determine the azimuth of each property line of an assigned lot.

3. Draw a survey of the ideal property on which you would like to build a home, showing all features which would fully describe the property.

4. Make a plot of the assigned surveyor's data using protractor. Sheet problem 112.

5. Using a transit and compass, lay out plot using surveyor's data assigned. Sheet problem 112.

IDENTIFY THE FOLLOWING TERMS:

1. Survey
2. Contour lines
3. Azimuth bearing
4. Transit
5. Angle
6. Surveyor
7. Contour interval
8. Man-made features
9. Natural features

TERMS

1. Orientation--the location of a feature with respect to the property lines, sun, etc.

2. Elevation--the height of a feature above an existing datum or benchmark.

3. Grade--the surface of the ground around a building.

4. Setback--a zoning restriction which applies to the location of the home on the lot.

5. Contour line--a line connecting a series of points whose elevations are the same height above an established datum.

6. FHA--the Federal Housing Administration, a government agency that guarantees home loans and sets forth minimum property standards for these guarantees.

7. VA--the Veterans Administration, a government agency that guarantees home loans to Veterans and sets forth minimum property standards for these guarantees.

8. Easement--an area of a piece of ground with rights given to another for the purpose of placing power lines, drains and other specified uses.

9. Utilities--service from outside the bounds of the lot, such as gas, electricity, telephone, sewer, etc.

10. Benchmark--a mark on some permanent object fixed to the ground from which land measurement elevations are taken.

11. Overhang--the projecting area of a roof or upper story beyond the wall of the lower part.

12. Lot line--the line forming the legal boundary of a piece of property.

13. Callouts--a note on a drawing with a leader to the feature.

14. Ordinances--the term used to designate any conditions to which the use of land may not be put and the penalties for failure to comply.

15. Lot--a measured amount of land property (land) having fixed boundaries.

16. Reinforced concrete--concrete with steel bars or webbing embedded for strength.

17. Septic tank--a concrete or steel tank where sewage is partially reduced by bacterial action.

18. Zoning--building restrictions which regulate size, location and type of structures to be built in specific areas.

19. Arpent--a unit of old French land area equal to .85 acre used in some sections of South Louisiana.

20. Vara--a unit of Spanish measurement in use in Texas and parts of California. In Texas, a vara equals 33-1/3 inches; in California, it equals 33 inches; in Spain, Portugal, and Latin America, it equals from 32 to 43 inches.

21. Base line--a line of known length and position; a starting basis for laying out townships.

22. Land survey--fixes boundaries, used to find areas and plots of ground.

23. Plane survey--used on small plots of ground; no allowances for the curvature of the earth.

24. Geodetic survey--used for large areas and long boundaries; allows for curvature of the earth.

25. Topographical surveys--shows altitudes, elevations and depressions.

## MEASUREMENTS USED IN LAND DESCRIPTION

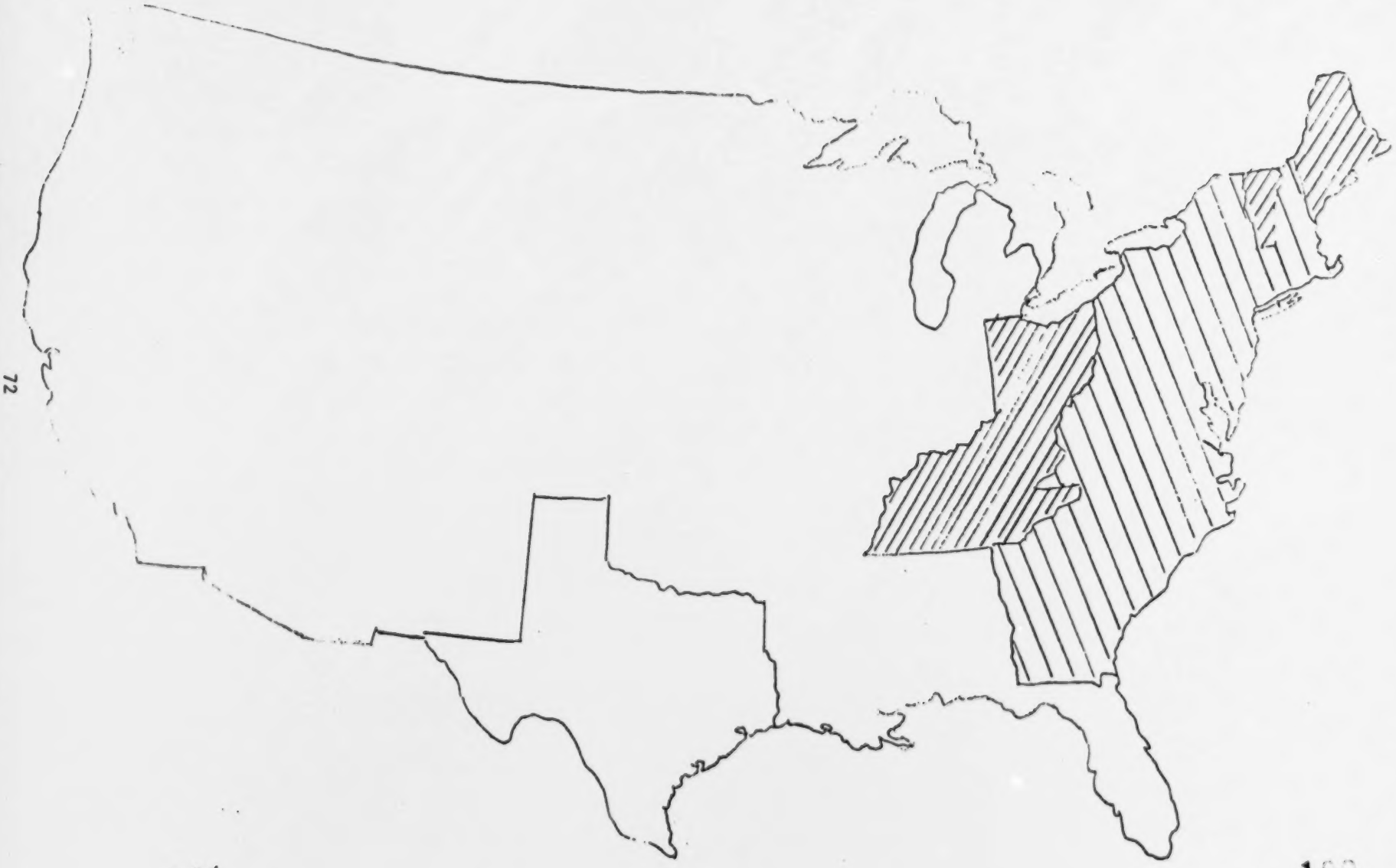
1 link = 7.92 inches

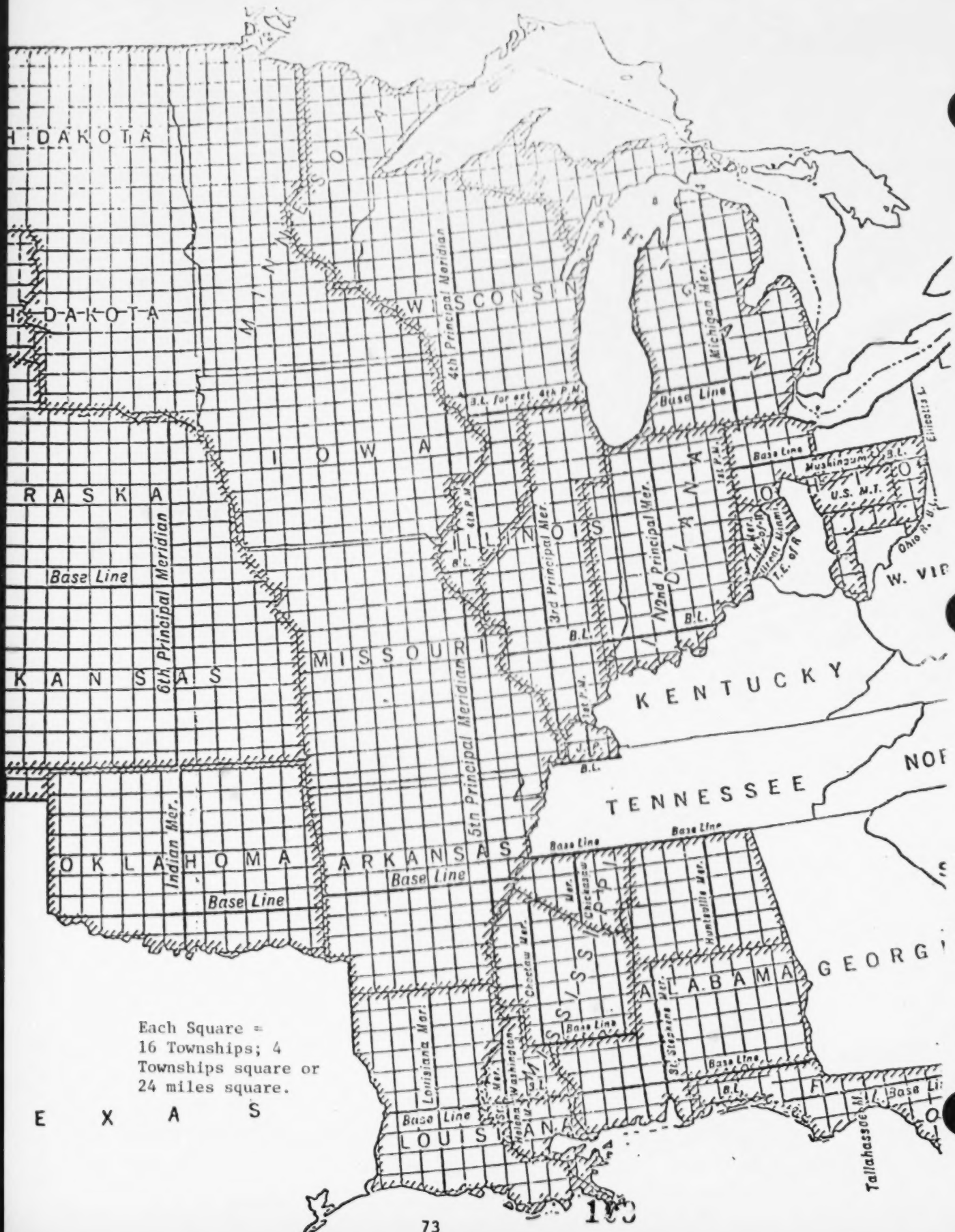
1 rod = 25 links, or 16-1/2 feet, or 5-1/2 yards

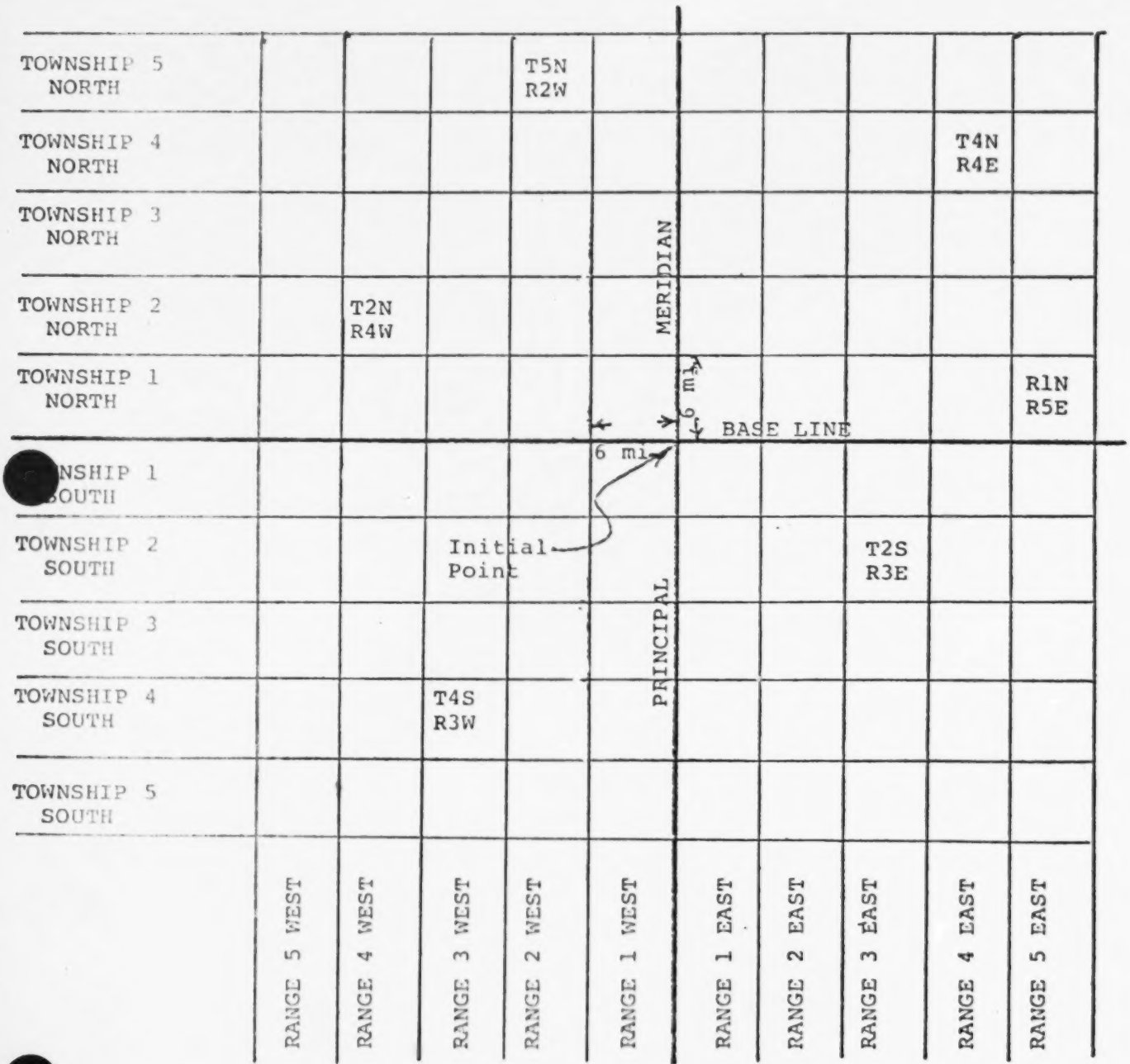
1 chain = 100 lines, or 4 rods, or 66 feet

1 furlong = 40 rods or 660 feet

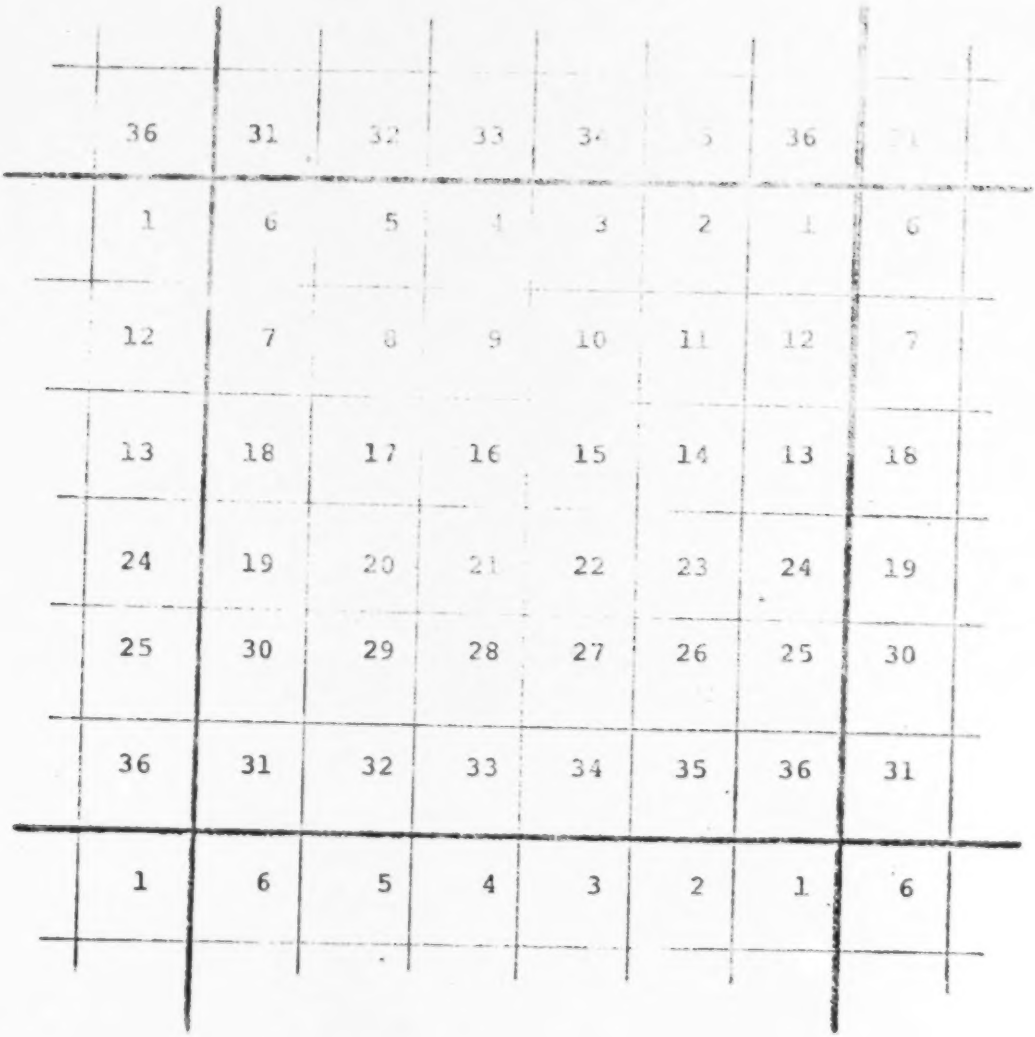
1 mile = 8 furlongs, or 320 rods, or 80 chains, or 5,280 feet


72
101
102


DAKOTA
DAKOTA
MINNESOTA
WISCONSIN
IOWA
ILLINOIS
MICHIGAN
INDIANA
OHIO
W. VIR
KENTUCKY
TENNESSEE
NOR
RASKA
KANSAS
MISSOURI
OKLAHOMA
ARKANSAS
MISSISSIPPI
ALABAMA
GEORG
LOUISIANA
FLO
TEXAS
Base Line
4th Principal Meridian
6th Principal Meridian
3rd Principal Mer.
2nd Principal Mer.
5th Principal Meridian
Indian Mer.
Michigan Mer.
Huntsville Mer.
Chickasaw Mer.
Choctaw Mer.
Washington Mer.
Louisiana Mer.
St. Stephens Mer.
Tallahassee M.
Muskingum B.L.
U.S. M.T.
Ohio R. B.L.
T.E. of R.
Each Square = 16 Townships; 4 Townships square or 24 miles square.


TOWNSHIP 5 NORTH
TOWNSHIP 4 NORTH
TOWNSHIP 3 NORTH
TOWNSHIP 2 NORTH
TOWNSHIP 1 NORTH
TOWNSHIP 1 SOUTH
TOWNSHIP 2 SOUTH
TOWNSHIP 3 SOUTH
TOWNSHIP 4 SOUTH
TOWNSHIP 5 SOUTH
T5N R2W
T4N R4E
T2N R4W
R1N R5E
T2S R3E
T4S R3W
Initial Point
6 mi
6 mi
BASE LINE
PRINCIPAL MERIDIAN
RANGE 5 WEST
RANGE 4 WEST
RANGE 3 WEST
RANGE 2 WEST
RANGE 1 WEST
RANGE 1 EAST
RANGE 2 EAST
RANGE 3 EAST
RANGE 4 EAST
RANGE 5 EAST

OFFICIAL PLAT OF TOWNSHIP
SECTIONIZED AND NUMBERED
WITH ADJOINING SECTIONS




105

ONE SECTION OF LAND CONTAINS
ONE SQUARE MILE OR 640 ACRES

<table>
<tr><td>20 chains<br>80 rods<br><br>W1/2 NW1/4<br>80 acres<br><br>1320 feet</td><td>20 chains<br>80 rods<br><br>E1/2 NW 1/4<br>80 acres<br><br>1320 feet</td><td colspan="4">40 chains 160 rods<br><br>NE1/4<br>160 acres<br><br>2640 feet</td></tr>
<tr><td>NW1/4 SW 1/4</td><td>NE 1/4 SW 1/4</td><td colspan="2">N1/2 NW1/4<br>SE1/4<br>20 acres<br>S1/2 NW1/4<br>SE1/4<br>20 acres<br>20 chains</td><td>W1/2<br>NE1/4<br>SE1/4<br>20 ac.<br>10 ch.</td><td>E1/2<br>NE1/4<br>SE1/4<br>20 ac.</td></tr>
<tr><td rowspan="2">SW1/4 SW1/4<br>40 acres<br><br>80 rods</td><td rowspan="2">SE1/4 SW1/4<br>40 acres</td><td>NW1/4<br>SW1/4<br>SE1/4<br>10 ac.</td><td>NE1/4<br>SW1/4<br>SE1/4<br>10 ac.</td><td>5 ac.<br>5 ac.<br>1 furlong</td><td>5 ac.<br>5ch.</td><td>5 ac.<br>5ch.</td></tr>
<tr><td>SW1/4<br>SW/14<br>SE1/4<br>10 ac.</td><td>SE1/4<br>SW1/4<br>SE1/4<br>10 ac.</td><td>2.5<br>2.5</td><td>2.5<br>2.5</td><td colspan="2">10 ac.</td></tr>
<tr><td colspan="2"></td><td colspan="2">660'</td><td colspan="2">330'</td></tr>
</table>

SECTIONAL CHART

ROOF AND PLOT PLAN PROCEDURES

1. Tape a copy of the subdivision plat containing the lot you have selected for your board (be sure it is off to one side of the drawing area). Turn the lot so that the front of the lot faces you; in other words the front of the lot and usually the house should be parallel to your horizontal straight edge; the front is the side that faces the street. This will enable you to transfer angles directly from the plat to your drawing paper.

2. Select an appropriate sized sheet for your plot plan. To do this, use an engineers scale at 1"=20'-0" and mark the length and width of the selected lot on your paper to be sure your sheet will be large enough. Approximately 3" will be needed at the bottom of the sheet for the title, scale, location, etc.

3. Now you can draw the lot using the angles and dimensions on the plat (subdivision). Draw in all utility, sewer, and drainage easements if they are called for.

4. Transfer the North arrow from the plat to your paper. Draw a light line 30-0" back from the front property line. This line is the minimum building setback line (most lots in this area have 30'-0" setbacks; refer to the plat for this information.) Corner lots will usually have two setbacks. The side yard clearance must be at least 5'-0" from the property line. (This is a minimum property standard.)

   NOTE: The setback clearance is not to the roof overhang, but to the edge of the building closest to the property line. The closest edge of the building includes bow or bay windows, fireplaces, and covered porches (on a covered porch the clearance line would be to the edge of slab).

5. Now you are ready to put your house on the lot. If your garage faces the street you will usually center your house on the lot. You might want to put your house 5'-0" from one side if you would like to avoid removing a big tree or if a larger side yard is needed on the opposite side for a specific reason, such as boat storage. If the garage has a side entrance, be sure to leave room for the drive and a turnaround; the turning radius is usually 20'-0". Most houses with a garage which will be entered from the rear should be on a corner lot.

6. After you position your house, block it in lightly using the overall dimensions of the house. REMINDER: all edges of the slab or walls under roof go behind the 30'-0" setback line. Think before you draw. Look to see if you have a covered porch, etc., before you begin.

7. Using the dimensions on your floor plan, lightly finish drawing the exact outline of the house. Recheck all dimensions and then heavy in the exterior walls. (Building lines should be heavy.) Now draw the porches, terraces, etc., with medium lines.

8. Draw your roof intersections:

   GENERAL PROCEDURE

   a. No matter what type of roof is being shown, the first lines drawn

represent the roof overhang.

b. Locate all chimneys or other constructions which pierce the roof. At this point, a flat or one-pitch roof would be complete; it has no ridges, hips, or valleys (Figs. A and B).

NOTE: -roof plan will be drawn with hidden lines
-be sure to include all covered porches, terraces, etc.
-normally when drawing the roof plan, only three kinds of lines will be necessary. They are horizontal, vertical, and 45°.

There will always be three lines coming from each intersection of the roof. (At this point keep these lines light.)

PROCEDURE FOR GABLE ROOFS

a. Same as above.
b. Same as above.
c. Find the center of each span of the building (in the direction of the rafters) and draw a ridge line, assuming that both sides of the roof have the same slope. If there are no intersecting spans, the ridge line completes the construction (Fig. A and B).
d. If the axis of the building changes, bisect the angle at the eaves and continue this line until it strikes the ridge line of the narrow span; draw a line from this point back to the other eave line of the narrow span. These are valley lines. Usually the spans intersect at 90°, in which case the valley lines are drawn at 45°. This is true also in the construction of valleys on a hip roof (Figs. A and B).

PROCEDURES FOR HIP ROOFS

a. Same as General Procedure.
b. Same as General Procedure.
c. Hip lines bisect the angles of the eaves at the roof corners. They are drawn until they intersect; the ridge continues from this intersection point as with a gable roof. Most roofs have 90° corners in plan; therefore, these hip lines are at 45° (Figs. A and B).

NOTE: Have me check your work and then heavy your lines in.

9. Draw in your driveway. If your garage is at the front, you can run it straight out to the street. The front property line is not the edge of the street; so run it about 5'-0" beyond the property line and place a short 45° line pointing outwards on both sides. This represents a concrete apron (to be called out on the plan as "6" THK. CONC. APRON"). If the garage is at the side or back, swing an arc of 20'-0" from each side. Then draw a 10'-0" drive out to the street.

10. Draw a walk from the front door to the drive. In some cases where the drive is at the side or back of the house, run the walk out to the sidewalk. The width of the walk may vary from 3'0 to 4'0.

11. To dimension your house, you will use the two overall dimensions on your floor plan. Remember that if the front porch is covered, dimension to the porch. Be sure to include bay windows in overall dimensions. Place a

dimension from the side of the house to the property line. If the property lines and house are not parallel, write verify under the dimension line. This is done because the dimension is only as accurate as your drawing. Finally, dimension the 30'-0" setback, placing the note "VERIFY SETBACK" under the dimension line.

12. Some lots will have to have a water well and septic tank or both. These will be placed to the rear of the house, but the location will be verified by the contractor. The water well is to be drawn with about a 1/4" circle with a smaller one within (hidden lines). You will do the same with the septic tank, but use a square. Then run about three to five hidden lines to the rear of the tank (square). This will represent field lines (pipes used to disperse the sewerage after it is purified in the septic tank).

13. The following features will usually be called out on the plot plan (refer to reference plans for the location of these callouts):
    a. Bldg. line (edge of building)
    b. Roof line (edge of roof)
    c. Chimney
    d. Terrace (patio)
    e. Grade lot per FHA MPS (This is to be sure the contractor will grade the lot to drain properly according to Federal Housing Administration-Minimum Property Standards.)
    f. North Point
    g. Easements (utility, drain, etc.)
    h. 4" thick x 3'-0" (this may vary) reinf. conc. walk
    i. 4" thick x 10'-0" (this may vary) reinf. conc. drive
    j. Name of street
    k. Title
    l. Length of each property line
    m. Elevations (Height of the ground or feature above a datum). The datum, sometimes the finished floor of the house, will be placed at the following points: corners of the lot and at corners of the house at the grade line and finished floor.

SCALE WORKSHEET CW-I

A civil engineer's scale is used in most mapping work. Civil engineer's scales are always fully divided and can be obtained in any of the flat or triangular types. Scales found on the triangular type are 1" = 10', 1" = 20', 1" = 30', 1" = 40', 1" = 50', 1" = 60'. Land measurement is always recorded in feet and decimal parts of a foot, rather than inches. Therefore, the inch unit on the 1" = 10' scale would have 10 divisions, and the inch unit on the 1" = 20' scale would have 20 divisions, each representing feet throughout the other scales. If a scale of 1" = 100' were needed, the 1" = 10' scale could be used by merely letting each inch represent 100' instead of 10'. This method applies to other scales as well.

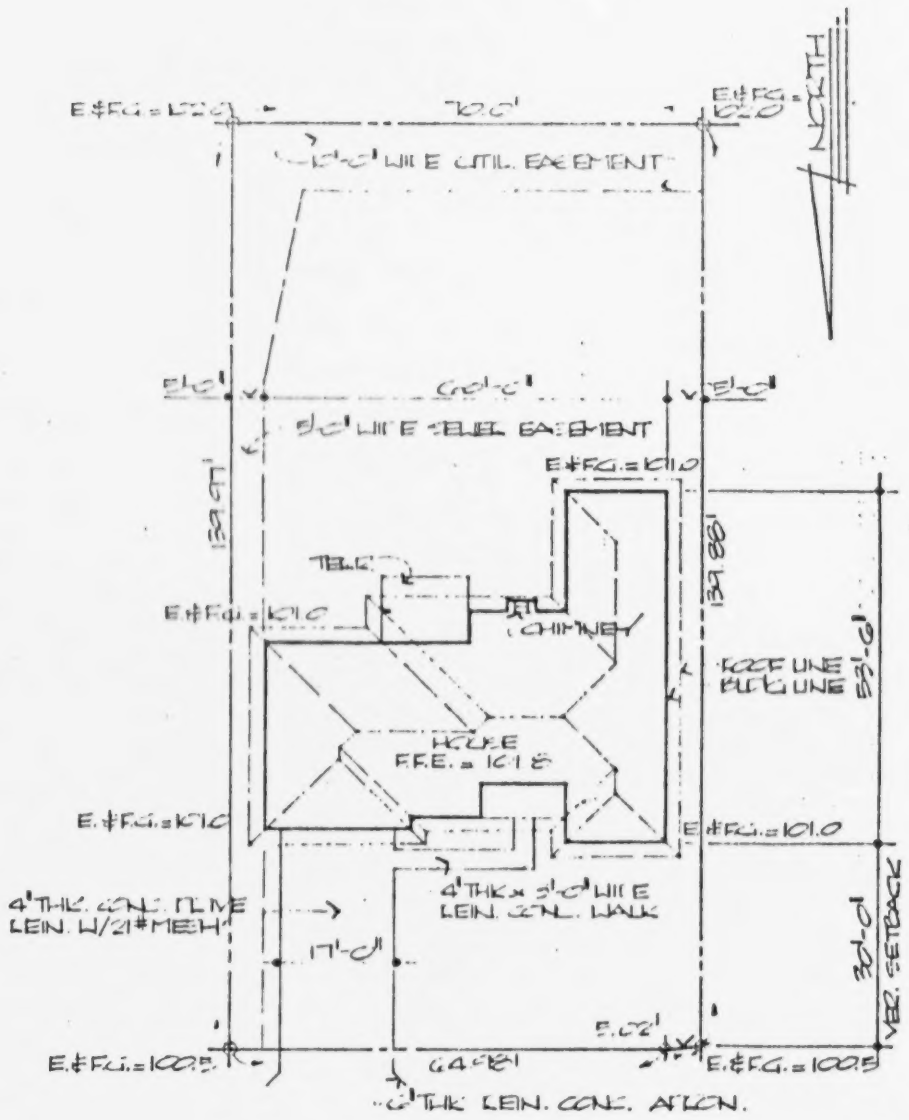
Complete the chart below as indicated by measuring the lines shown with the various scales shown on the chart.

A ———————————

B ———————————————

C ———————————————————

| | A | B | C |
|---|---|---|---|
| 1" = 10' | | | |
| 1" = 20' | | | |
| 1" = 200' | | | |
| 1" = 30' | | | |
| 1" = 3000' | | | |
| 1" = 40' | | | |
| 1" = 800' | | | |
| 1" = 100' | | | |
| 1" = 50' | | | |



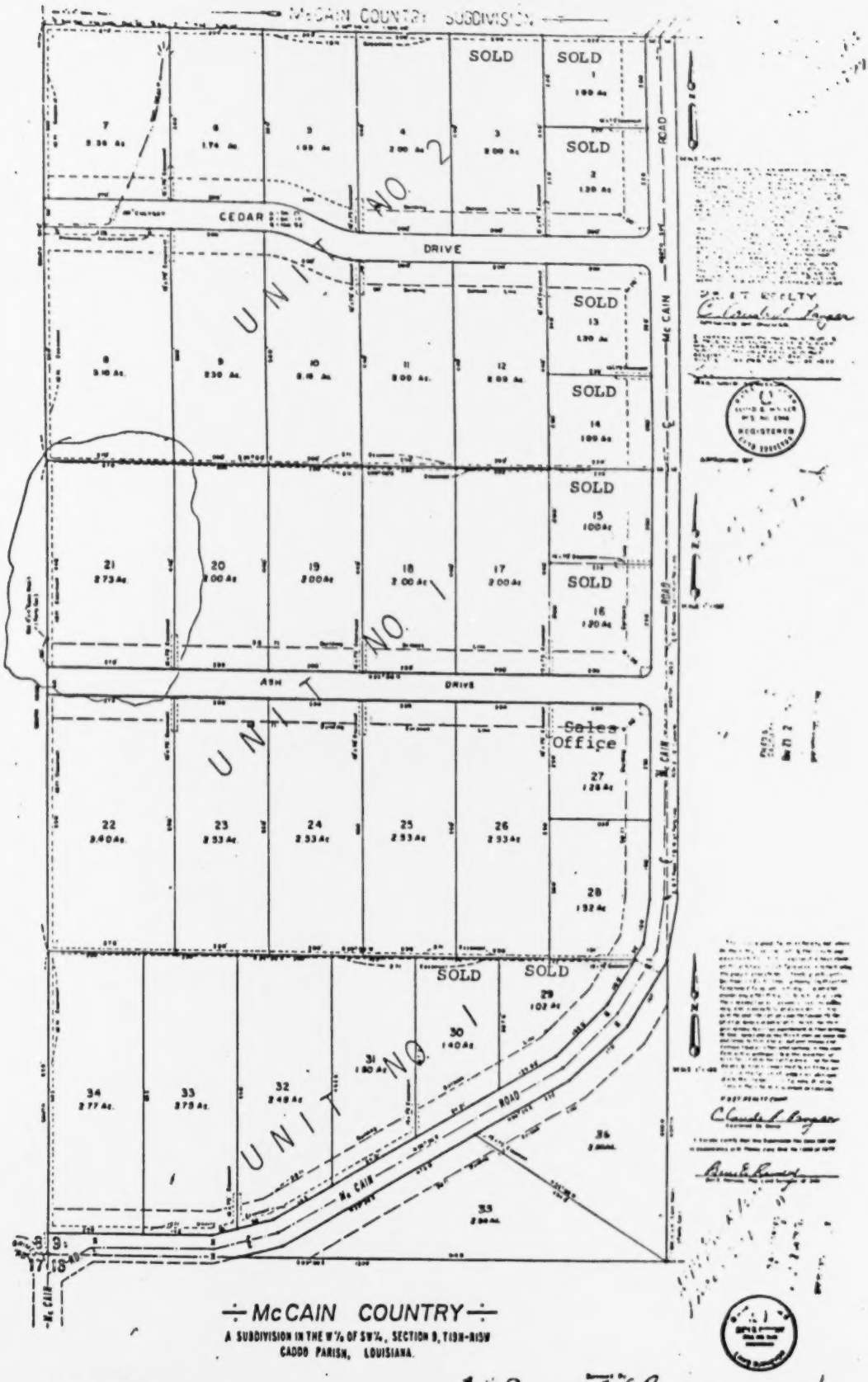

CASHWOOD

LOCF # 1 LOT PLAN SCALE - 1" = 20'-0"

LOT # 18 - ELKINS PARK - UNIT # 1 - CAMP PARISH,
MR. & MRS. NHAN T. TRAN - OWNERS LA.

NOTE - VERIFY ALL DIM'S & SOIL MECH REQUIREMENTS
PRIOR TO CONSTRUCTION.

111


McCAIN COUNTRY SUBDIVISION
SOLD
SOLD
SOLD
SOLD
SOLD
SOLD
SOLD
SOLD
SOLD
SOLD
Sales Office
CEDAR DRIVE
ASH DRIVE
McCAIN ROAD
UNIT NO 2
UNIT NO 1
McCAIN COUNTRY
A SUBDIVISION IN THE W½ OF SW¼, SECTION 9, T18N-R15W
CADDO PARISH, LOUISIANA.

112

THE MEADOWS
UNIT NO. 1

BEING A RESUBDIVISION OF LOTS 1 THRU 24, LOTS 67 THRU 78, LOTS 176 THRU 227 AND PORTIONS OF LOTS 25, 66, 168, 169, 170, 171, 172 AND 173, ALL IN CHATEAU VILLAGE SUBDIVISION, AS RECORDED IN BOOK 1300, PAGES 199, 201, 203 AND 205 OF THE RECORDS OF CADDO PARISH, LOUISIANA.

**Dedication:**

The Undersigned Owner has caused Subunit No. 1 to be platted and has designated the streets and the lots shown and the servitudes and rights-of-way as the subdivision and the servitudes granted for public purposes. The Undersigned Owner has caused said lots and Subdivision to be surveyed, platted and subdivided with the free consent and will of the Undersigned Owner. By these presents the Undersigned Owner does hereby dedicate to the public the streets and servitudes as shown on said plat and reserves unto itself, its successors and assigns the ownership of said streets, alleys, and servitudes, subject to the rights of the public therein. The Undersigned Owner does hereby agree to hold harmless the City of Shreveport and to the Parish of Caddo from claims due to damage to natural growth, existing homes, grade lines, drainage, and any damage.

I HEREBY CERTIFY THAT THIS SUBDIVISION PLAT CONFORMS TO ORD. NO. 115 OF 1970 AND AMENDMENTS THERETO.

ROBERT E. JONES
Robert E. Jones & Associates
Consulting Civil Engineers
Shreveport, Louisiana

ROBERT E. JONES
REGISTERED LAND SURVEYOR

Accepted By City Council
Resolution No. 47 of 1975

MAYOR

SECRETARY-TREASURER

APPROVED:

CITY ENGINEER

Metropolitan Planning Commission

STATE OF LOUISIANA
ROBERT E. JONES
REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR

RECORDED:
BOOK 1500, PAGE 12
645658
RECORDED OWNER

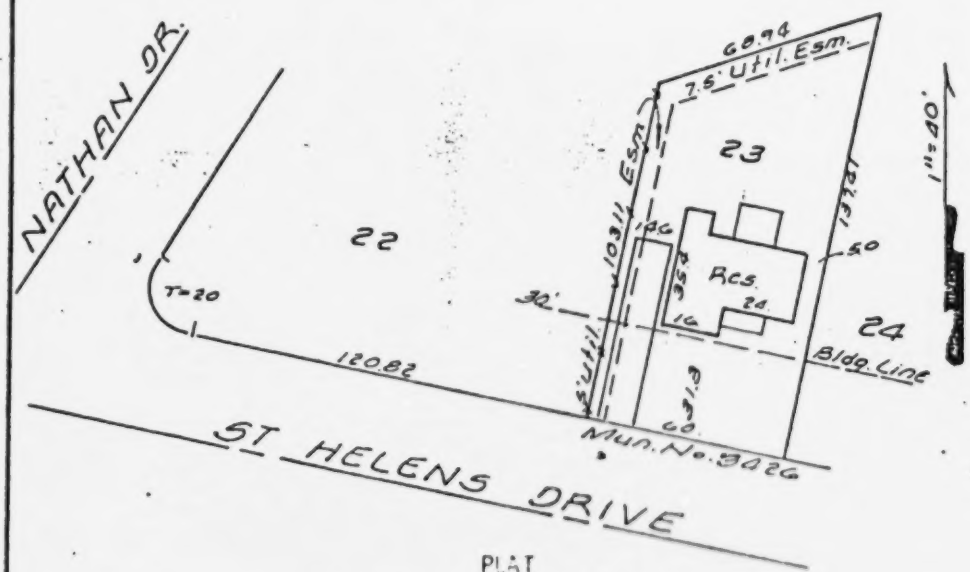
FILED & RECORDED CADDO PARISH, LA.
FEB 10 2 23 PM '75

NORTH DEVELOPMENT CO., INC.
Juston W. Alley
JUSTON W. ALLEY, VICE PRESIDENT

CONTRACT PURCHASER
GIBSON CONSTRUCTION CO., INC.
THOMAS FORD GIBSON, PRESIDENT

MORTGAGEE, FIRST NATIONAL BANK OF SHREVEPORT
J. H. WATSON, PRESIDENT

113




PLAT
SHOWING LOT & IMPROVEMENTS
DECEMBER 3, 1983

BRYAN ASHLY GALLANT

SURVEY OF LOT 23 OF HICKORY PLACE, SHREVEPORT, CADDO PARISH, LA., AS PER PLAT RECORDED IN BOOK 1300 AT PAGES 35 AND 37 OF THE RECORDS OF CADDO PARISH, LA.

I CERTIFY THAT THIS PLAT REPRESENTS AN ACTUAL GROUND SURVEY, AND THAT NO ENCROACHMENTS EXIST EITHER WAY ACROSS ANY OF THE PROPERTY LINES.

THIS LOT IS NOT IN A FLOOD HAZARD ZONE.

CENSUS TRACT 241.01

ROGER C. WILKINSON
&
ASSOCIATES
Registered Land Surveyor
2620 Centenary Blvd. Phone
Shreveport, La. 71104 221-8080

STATE OF LOUISIANA
ROGER C. WILKINSON
REGISTER No. 2118
REGISTERED
LAND

X _____

BIBLIOGRAPHY


1. Ramsey and Sleeper. Architectural Graphic Standards. New York: John Wiley & Sons, Inc., 1970.

2. Logan, Joe D. Architectural Drawing I. St. Louis, MO: Milliken Publishing Co., 1980.

3. Logan, Joe D. Architectural Drawing II. St. Louis, MO: Milliken Publishing Co., 1980.

4. Muller, Edward J. Architectural Drawing and Light Construction. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1976.

5. Waffle, Harvey W. Architectural Drawing. Milwaukee, WI: Bruce Publishing Co., 1962.

6. Helper, Donald and Wallaby, Paul I. Architecture Drafting and Design. New York: McGraw-Hill, 1982.

7. Kicklighter, Clovis E. Architecture Residential Drawing and Design. South Holland, IL: Goodheart-Wilcox Co., Inc., 1973.

8. Spence, William P. Architecture Design--Engineering Drawing. Bloomington, IL: McKnight Publishing Co., 1979. (With Workbook and Teacher's Manual)

9. Wallach, Paul I. Basic Architectural Drafting. Cincinnati, OH: Southwestern Publishing Co., 1982. (With Workbook)

10. Brown, Walter C. Blueprint Reading for Construction. South Holland, IL: Goodheart-Wilcox, 1980.

11. Voisingt, Donald D. Introduction to CAD. New York: McGraw-Hill, Inc., 1983. (With Teacher's Manual)

12. Ball, John E. Carpenters and Builders Library #2. Indianapolis, IN: Theodore Auden and Co., 1976.

13. Goetsch, David L. The CAD/CAM Workbook. Cincinnati, OH: Southwestern Publishing Co., 1983

14. Spence, William P. Construction: Architectural Drawing. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1976.

15. Spence, William P. Drafting Technology and Practice. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1973. (With Workbook)

16. Wyatt, Willia E. General Architectural Drafting. Peoria, IL: Charles A. Bennett Co., Inc., 1976.

17. Anderson, L. O. Wood Frame House Construction. Washington, D.C.: U. S. Department of Agriculture (Handbook #73), U. S. Government Printing Office, 1970.

18. Lux, et al. World of Construction. Bloomington, IL: McKnight Publishing Co., 1982.